

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



2009-2010 Annual Report



BOBBY JINDAL, GOVERNOR
ROBERT J. BARHAM, SECRETARY

Lois Azzarello, *Undersecretary*
Randy Pausina, *Assistant Secretary*
Jimmy Anthony, *Assistant Secretary*

DIVISION ADMINISTRATORS

Joe Shepard, *Fisheries*
Kenneth Ribbeck, *Wildlife*
Robert Love, *Coastal & Nongame Resources*
Winton Vidrine, *Enforcement*

WILDLIFE AND FISHERIES COMMISSION

Stephen Sagrera, *Chairman*
Patrick C. Morrow
Stephen J. Oats
Ann L. Taylor
Ronald Graham
Michael C. Voisin
Billy Broussard

The charge of the Louisiana Department of Wildlife and Fisheries is to protect, conserve and replenish the natural resources, wildlife and aquatic life of the state.

CONTENTS

02

FROM THE SECRETARY

03

OFFICE OF SECRETARY

05. Enforcement

09

OFFICE OF
MANAGEMENT & FINANCE

- 11. Computer Center
- 13. Human Resources
- 13. Licensing
- 14. Fiscal
- 16. Public Information
- 20. Property Control

21

OFFICE OF WILDLIFE

- 23. Wildlife
- 36. Coastal Nongame & Resources

69

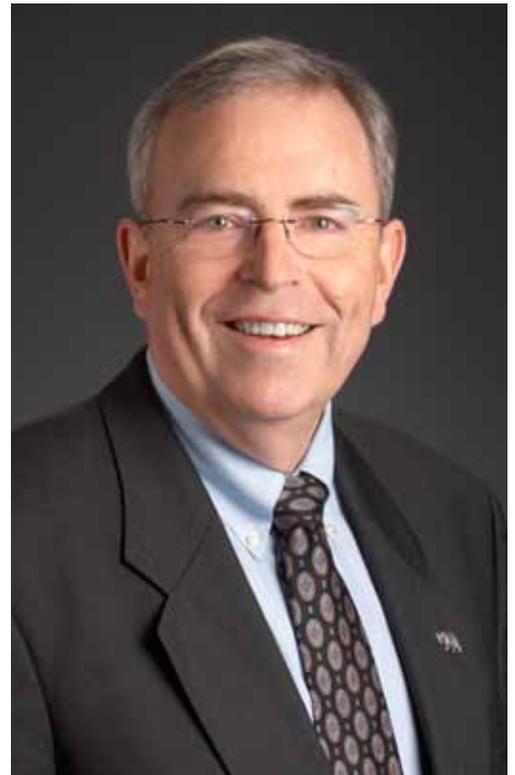
OFFICE OF FISHERIES

- 71. Environmental & Habitat Disaster Recovery
- 81. Access, Opportunity & Outreach
- 84. Habitat Stewardship & Resource Management
- 104. Administrative
- 105. Louisiana Seafood Promotion
& Marketing Board
- 106. Socioeconomic Research & Development

FROM THE SECRETARY

As fiscal year 2009-2010 ended on June 30, Louisiana Department of Wildlife and Fisheries (LDWF) staff was in the midst of a concerted response to a disaster that, in scope, was unlike any seen previously.

The Deepwater Horizon oil rig explosion and subsequent spill required thousands of personnel hours that touched every division in the agency. From biologists monitoring oil as it approached and then impacted beaches and marshes, to those rescuing impacted wildlife, to those sampling marine species for contamination; plus enforcement agents patrolling closed fishing grounds and administrative support personnel tracking expenses and documenting personnel time; and our public information personnel moving details out to the media and the public on a daily basis, this was an event that eclipsed in time and effort the recent hurricane seasons of 2005 and 2008.



Looking back on the full year, I can report that LDWF employees continued to deliver constituent services for a broad range of customer assistance including license sales, outdoor education, and habitat management both private and public, as well as enforcement of fish and game regulations statewide.

The challenges were there in fiscal year 2009-2010, as they were for all state agencies, to provide services in an efficient and expedient manner, and that will not change in the years ahead.

The follow-up in the oil spill aftermath will require LDWF staff to assess damage to coastal fisheries and wildlife resources for years to come. We will track the impacts to coastal waters and marshes and the reproductive cycles and harvest of those species that are closely connected to that habitat. Funding obtained from the responsible party will assist as seafood testing, research and promotional efforts move forward in the months and years ahead, and LDWF will oversee the programs designed to regain consumer confidence.

Resource management and protection are at the core of this agency's mission, and that mission will be served by the dedicated men and women at LDWF.

A handwritten signature in black ink, reading "Robert J. Barham". The signature is fluid and cursive, with the first letters of the first and last names being significantly larger and more prominent.

Robert J. Barham, *LDWF Secretary*



OFFICE OF SECRETARY

The Office of Secretary is administered by LDWF's chief administrative officer, who oversees all scientific operations as organized by the Office of Wildlife and the Office of Fisheries. The Secretary also has ultimate authority over the operation of LDWF's fiscal and business matters as administered by the Office of Management and Finance. Support operations of LDWF report directly to the Secretary. These include the Enforcement Division and LDWF's Legal Section.

ENFORCEMENT DIVISION

The Law Enforcement Division is responsible for enforcing laws enacted by the Louisiana Legislature relative to fish and wildlife resources and boating safety regulations, as well as federal regulations pertaining to migratory birds and endangered species.

LEGAL SECTION

The Legal Section represents the department and the Wildlife and Fisheries Commission in all legal matters involving promulgation, enforcement and administration of the state's fish and game laws and regulations, litigation involving department programs, daily advising and counsel, and drafting of contracts, legal documents and legislation.

OFFICE OF SECRETARY

ABBREVIATIONS

GOHSEP - Governor's Office of Homeland Security and Emergency Preparedness

LDWF - Louisiana Department of Wildlife and Fisheries

LED - Law Enforcement Division

SAR - Search and Rescue

WMA - Wildlife Management Area

ENFORCEMENT

The Louisiana Department of Wildlife and Fisheries Law Enforcement Division (LDWF/LED) is a fully-commissioned statewide law enforcement agency with the primary mission of protecting Louisiana's natural resources and serving the people who utilize them. Beyond the traditional role of ensuring compliance with licensing and harvesting regulations, LDWF/LED also conducts search and rescue missions, enforces boating safety laws, investigates boating and hunting accidents, and provides boater education classes for thousands of citizens each year.

LDWF/LED conducted 365,456 patrol hours in fiscal year 2009-2010: 227,790 on land and 137,666 on water. Agents made 754,027 contacts with the public, the majority of whom were in compliance with state and federal wildlife and fisheries regulations. LDWF/LED agents issued 18,035 criminal citations and 4,964 warnings during this period. The most common types of citations were fishing without a license, failure to comply with personal flotation device requirements, not abiding by rules and regulations on wildlife management areas (WMAs), and failure to comply with deer tagging or harvest record regulations.

ORGANIZATIONAL STRUCTURE & PERSONNEL

LDWF/LED is organized in a paramilitary structure to assure the efficient use of resources, consistent statewide enforcement policy and an effective, coordinated response to urgent needs (Figure 1). LDWF/LED is commanded by one colonel, the Chief of Enforcement, who reports directly to LDWF's Secretary. Reporting to the colonel are two lieutenant colonels: one supervising search and rescue and field operations; and one overseeing administration of the division and the operations of the Aviation Section, and serving as LDWF's legislative liaison. The Enforcement Division is divided up into eight regions across the state and headquarters in Baton Rouge. There are two majors, one over the even-numbered regions of the state and one over the odd-numbered regions, and a captain over the Bureau of Operations, which includes boater safety education programs, Special Operations Section, Special Investigations Unit, and Statewide Strike Force.

Louisiana is divided into eight enforcement regions (Figure 2), each composed of two or three multi-parish districts. Each region is managed by a captain who supervises two or three district supervisors of the lieutenant rank. Regions have between 16-25 agents, depending on regional size, resident population and participant population.

Total division head count is 257 positions. The actual number of filled positions (as of February 2011) is 257,

LDWF LAW ENFORCEMENT DIVISION ORGANIZATION CHART

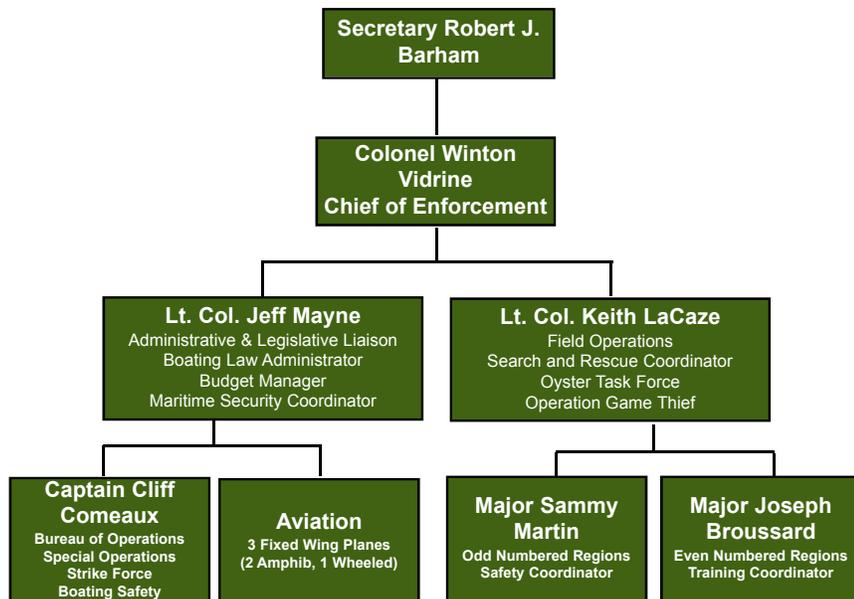


FIGURE 1.

ENFORCEMENT DIVISION REGIONS

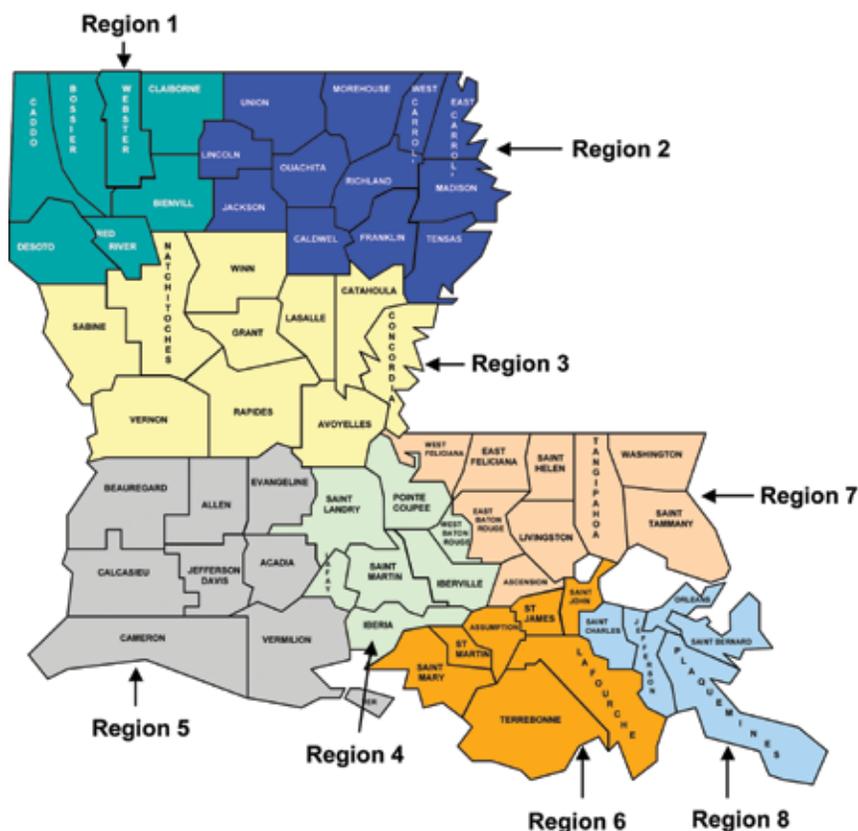


FIGURE 2. LDWF Law Enforcement Division Regions.

including 235 enforcement agents and 24 administrative staff, including six communications officers and two pilots.

Current funding provides a field enforcement staff of two to four agents per parish, according to the nature of wildlife-based activities in the area, the number of people participating, the frequency of their participation and other factors.

REGIONAL ENFORCEMENT PROGRAMS

Most of the law enforcement activity performed by LDWF/LED is conducted by regional agents. Regional agents work a schedule assigned by their supervisors to address seasonal needs, reported violations, weather conditions and predominant activities. Agents are on-call 24 hours per day and must be willing to change their work hours and locations as circumstances require. Schedules are often changed due to weather and reported violations, and agents are often called out to respond to violations in progress, boating and hunting accidents, and calls for search and rescue.

Agents use a variety of vehicles during land patrols, primarily four-wheel drive trucks and all-terrain vehicles. The primary patrol vessels used during water patrols are outboard bay boats and 19-to-32-foot marine patrol vessels. LDWF/LED also deploys go-devils, airboats, surface river mudboats, bass boats and flatboats.

SPECIALIZED UNITS

LDWF/LED contains five specialized units with selected missions or purposes: the Special Operations Section; the Special Investigations Unit; the Oyster Strike Force; the Statewide Strike Force; the Maritime Special Response Team; and the Aviation Section. Agents in specialized units have developed specific skills, expertise and knowledge appropriate for their particular operational fields. Agents in specialized units operate in relatively broad geographic areas and may work alongside regional enforcement agents when appropriate.

The Special Operations Section houses covert operations, in which undercover agents work to stem the illegal sale of fish and wildlife, develop information about ongoing criminal enterprises, and address major violations of state and federal law.

The Special Investigations Unit devotes attention to commercial fisheries operations and license fraud. Violations include smuggling, interstate commerce violations and false reporting, and under-reporting of commercial fish harvests.

The Oyster Strike Force works with region agents in coastal regions to address violations in the oyster industry, primarily harvesting from closed waters, stealing from oyster leases and state grounds, and oyster size regulations.

The Statewide Strike Force is assigned to work problem areas statewide. These agents provide regions with additional manpower on WMAs and places of high seasonal utilization, such as Grand Isle and other locations throughout the state.

The Maritime Special Response Team Cooperative endeavor by the LDWF Enforcement Division and the Louisiana State Police SWAT team addresses maritime security threats within the state of Louisiana. The team provides a maritime tactical response capability at the state level in order to safely and effectively provide public safety, officer safety, CBRNE prevention, and response and tactical support for LDWF's federal, state and local partners.

The Aviation Section contains two pilots and three airplanes. The Aviation Section's aircraft provide a valuable platform for detecting illegal hunting and fishing activities and frequently play a vital life-saving role in search and rescue operations. The Aviation Section also contributes its services to other divisions for biological missions, such as waterfowl counts and the monitoring of commercial fisheries.

BOATING SAFETY PROGRAM

With 15,000 miles of tidal coastline, 5,000 miles of navigable waterways, three of the busiest ports in the country, a thriving shipping industry, a large commercial fishing fleet, and over 324,000 registered boats, Louisiana contains many geographic, demographic and economic features that pose special challenges for boating safety enforcement. LDWF/LED agents made 274,868 public contacts during the course of 106,001 patrol hours dedicated to boating enforcement, education and accident investigation in fiscal year 2009-2010. More than 84,982 patrol hours were performed in vessels on the water.

The adoption of "Rules of the Road" regulations for boaters has enhanced the enforcement of boating safety regulations and boating under the influence laws. These regulations provide the boating public with clear rules for the manner in which boats are operated and are an important tool in determining fault in boating accidents. The "Rules of the Road" also enhance the ability of agents to address reckless and careless operation of motorboats. In fiscal year 2009-2010, LDWF/LED agents issued 153 citations for careless and reckless operation of a vessel and 167 citations for operating a vessel while intoxicated.

The statewide LDWF/LED boater education course teaches safe, legal and responsible boat operation and is approved by the National Association of State Boating Law Administrators. This program provides a vital outreach to the community and has greatly improved the awareness of and compliance with boating safety practices and regulations in Louisiana. Agents hold monthly classes in each region for anyone who wishes or is required by Louisiana law to take them. In fiscal year 2009-2010, 6,865 citizens attended 287 classes. LDWF/

LED continues to recruit and train additional volunteer instructors to complement and enhance the efforts of its own agents.

Agents provided 38,497 patrol hours of search and rescue services, both on land and water, in fiscal year 2009-2010. These operations have saved lives, reduced the suffering of accident victims, stranded hunters, boaters and anyone else needing assistance, and minimized the anxiety for family members eager to learn the fate of their loved ones. Agents regularly train to hone their search and rescue skills and constantly work to develop close working relationships with other agencies to coordinate response efforts.

AGENT TRAINING PROGRAM

The Wildlife and Fisheries Law Enforcement Academy graduated seven agents in fiscal year 2009-2010. The academy trains and certifies cadets in a wide variety of areas, including the Peace Officers Standards and Training Council certification required of all law enforcement officers. Cadets live at the academy during the week and experience a boot camp-style program, with daily physical training in addition to classroom activities. There are many hands-on courses, such as waterfowl enforcement practices, boat operation and firearms training. Each cadet is equipped with a laptop computer with the capability for networking through the Internet for access to web-based courses and research sites.

Cadets receive training in numerous courses of study and are certified in 10 courses of training conducted by FBI-certified trainers from LDWF/LED and expert trainers from a number of other agencies. LDWF/LED personnel conduct training in standardized field sobriety testing, basic marine theft, basic defensive tactics, collapsible baton techniques, wildlife agents' aquatic survival, and chemical weapon indoctrination. The Louisiana State Police provides training in chemical testing for insobriety. The Louisiana State Police Highway Safety Division leads classes in DWI detection, and the Department of Public Safety conducts a Louisiana Safe Driver's Course.

JOINT ENFORCEMENT AGREEMENT

LDWF/LED again entered into a Joint Enforcement Agreement with National Oceanic and Atmospheric Administration's Office for Enforcement. LDWF/LED received approximately \$1,475,000 in fiscal year 2009-2010 to patrol for compliance with federal commercial and recreational fisheries regulations, primarily in the Gulf of Mexico. Several patrol vessels and other necessary equipment has been acquired under this program. Agents have been very successful identifying illegal and unregulated fishing activity and obtaining a number of large cases involving commercial and recreational violations.

OPERATION GAME THIEF

Louisiana Operation Game Thief, Inc. is a program, which provides cash rewards to those providing information leading to the apprehension of wildlife violators. Violations can be reported anonymously by accessing

LDWF's Web site (www.wlf.louisiana.gov) or by calling a 24-hour toll-free telephone number (1-800-442-2511) maintained in the LDWF Communications Center. Reports are immediately referred to agents for action. The callers may remain anonymous.

Rewards totaling \$17,100 were paid on 45 cases. In those 45 cases, 83 suspects were apprehended and issued a total of 292 citations. The total amount of rewards paid by Operation Game Thief since its inception 26 years ago is \$280,900.

LITTERING ENFORCEMENT

The "Litterbug Hotline" is now housed inside the LDWF Enforcement Division and littering tipsters can call 1-888-LITRBUG or 1-888-548-7284 24 hours a day to report any potential littering violations. As a part of the Governor's Office strategy to streamline public services, the LDWF Enforcement Division communication's section took over the litter hotline from the Louisiana Department of Environmental Quality on May 29. LDWF Enforcement Division agents issued 1,001 littering citations for fiscal year 2009-2010 and logged 7,958 patrol hours for littering enforcement.

HOMELAND SECURITY

LDWF/LED is an active participant in Louisiana's Homeland Security Plan and represents the state in waterborne emergencies. Through the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), LDWF/LED is the lead agency for search and rescue operations during natural disasters and maritime security of Louisiana's vital business and government interests along the coast and major rivers. As members of the Governor's Homeland Security Advisory Council, the Area Maritime Security Executive Steering Committee and all major port security committees within the state, LDWF/LED enforcement agents frequently respond to requests to deploy LDWF marine resources for security concerns. LDWF/LED specialized training and equipment and its ability to operate throughout the state's vast maze of waterways and wild areas has complemented Louisiana's ability to respond to emergencies on land and water.

LDWF/LED has developed a five-year maritime security strategic plan in order to provide direction and guidance for the expansion of its mission to include maritime security. This role further advances coordination efforts between the United States Coast Guard, Louisiana State Police, federal, state, ports and local government, and private partnerships to increase the efficiency and effectiveness of maritime safety and security and all hazards response for Louisiana and our nation. This expansion is necessary in order to meet the needs and threats that we are faced within Louisiana's maritime domain.

LDWF/LED recently created the Louisiana Maritime Security Working Group in order to provide better communication and coordination between the multiple regional layers of security on the state's waterways, so

that we can safely and effectively support these layers at the state level. LDWF/LED is also a member of the First Responder Committee through GOHSEP which was legislatively created. LDWF/LED's maritime security role coincides as a multi-mission responsibility and further enhances the agency's core mission responsibilities: to improve public safety services and protect natural resources and the supporting ecosystem while improving security in the state and nation.

MARITIME SEARCH & RESCUE COURSE

Since the devastating landfalls of Hurricanes Katrina and Rita, several law enforcement agencies across Louisiana have recognized the vital need to train officers in all aspects of search and rescue (SAR), especially maritime search and rescue. LDWF/LED, as the primary agency for SAR in the state, received several requests from law enforcement agencies to share the benefit of its wide experience in the area by providing maritime SAR training to their officers.

In 2007, the Louisiana Peace Officers Standards and Training Council granted LDWF/LED approval to offer the Maritime Search and Rescue Course to qualified POST-certified peace officers. The 40-hour Maritime Search and Rescue Course was designed and implemented to train other law enforcement officers in such areas as marine SAR, Louisiana Emergency Operation Plans (ESF-9 SAR), navigation rules, vessel handling, waterborne arrest techniques, and more.

BP DEEPWATER HORIZON OIL SPILL

During the BP Oil Spill, the Enforcement Division enforced the emergency commercial and recreational fishing closures, reported oil and oiled wildlife sightings, patrolled booming operations, provided security detail for VIPs, and escorted media to the oil spill area.

The following stats are from April 20, 2010 to June 30, 2010, though the Enforcement Division will still be assisting with the oil spill response efforts for the foreseeable future.

Total Criminal Citations for Fishing in the Closed State and Federal Areas = 460

- Commercial Fishermen in State Waters = 296
- Commercial Fishermen in Federal Waters = 95
- Recreational Fishermen in State Waters = 69

Total Warning Citations for Fishing in the Closed State and Federal Areas = 207

- Recreational = 151
- Commercial = 56

Totals of Fish Returned to the Water:

- 23,385 pounds of shrimp (of which 12,680 pounds were returned in federal waters)
- 262 trout
- 531 pounds and an additional 10 dozen crabs
- 11 red drum



- 8 mangrove snapper
- 1 southern flounder
- 1 cobia
- 340 pounds of various fish (all in federal waters)

The Enforcement Division made 113,783 public contacts during their 85,916 patrol hours enforcing the fishing closures and booming operations.



OFFICE OF MANAGEMENT & FINANCE

The Office of Management and Finance is directed by the Undersecretary. This budget unit is responsible for the functions of accounting, budget forecasting and control, procurement and contract management, administrative services, information technology services, management and program analysis (including strategic and operational planning), property control (including fleet management), boat registration, human resources management, federal grant reporting, administration and issuing of licenses and permits, collection of fees, taxes, fines and penalties, and public information and the Louisiana Conservationist magazine.

COMPUTER CENTER

The Computer Center oversees LDWF's information processing resources.

HUMAN RESOURCES

The Human Resources section handles all employee personnel actions and employee benefits, develops policies and procedures, conducts training and new employee orientation, and administers the performance planning and review program and LDWF's safety program.

LICENSING

The Licensing Section administers the issuance of all licenses and most other permits and is responsible for the collection and deposit of related fees.

FISCAL

The Fiscal Section is responsible for all financial operations of LDWF.

PUBLIC INFORMATION

The Public Information Section is responsible for the production of printed materials and audio-visual products, media relations, and special events and promotions.

PROPERTY CONTROL

The Property Control Section is responsible for LDWF's movable property program, fleet management program, and managing property, marine, general liability, aviation and vehicle insurance claims.

OMF ABBREVIATIONS

LDWF - Louisiana Department of Wildlife and Fisheries

PIO - Public Information Office

RBFF - Recreational Boating and Fishing Foundation

COMPUTER CENTER

The Computer Center is responsible for maintaining the Louisiana Department of Wildlife and Fisheries' (LDWF) information processing resources. The center operates three mainframes and 34 Intel based Windows servers. The Computer Center supports 699 computer users and 368 laptops in 16 locations throughout the state and supports and maintains the network infrastructure that ties them all together. We offer training, help desk support, custom programming, database services, Email services, Internet access, user data backup for headquarter users, statistical analysis tools for biologists, and imaging services for Human Resources, Licensing and Fisheries.

In addition, the Computer Center has developed the mainframe applications necessary to sell and maintain commercial licenses, motorboat registrations, hunting/boating safety, Alligator System and Lottery System. On the Intel platform, we developed and maintain the Enforcement application that allows us to track citations, as well as the Motorboat registrations and titling systems that allows us to issue registrations and titles for every boat in Louisiana.

The Computer Center, along with our Public Information section, maintains LDWF's public Web server, which contains information on hunting rules and regulations, season dates, licensing information, emergency closures and much more.

TECHNICAL SUPPORT SECTION

The Technical Section, which consists of four employees and one student, supports 699 users throughout the state. In the last 10 years, the number of personal computers that LDWF utilizes has grown from under 25 to over 900. Keeping these machines maintained and secure is one of the Technical Section's biggest challenges. Each of these machines must have regular updates applied and have certain software installed and updated (anti-virus, spyware).

Providing general help desk support for these computers occupies a large portion of a tech's time. For fiscal year 2009-2010, the technical section fielded 8,548 non-trivial telephone support calls, configured, built or relocated 365 computers/printers, and answered 10,555 emails on hardware and software support issues. Technical calls can be as simple as helping with an expired password, to helping with software problems/re-installations, or as complicated as helping repair and diagnose failed hardware. The technical staff must travel regularly to most of LDWF's remote facilities to perform this maintenance on machines.

The Technical Section maintains three mainframes and 34 Windows-based servers. Each of the mainframes/servers must be given daily maintenance. This includes not only keeping the operating systems and utility software up to

date, but also providing regular backups for all critical data to prevent loss. Loss of data can come from simply losing a disk drive, losing entire computers or being hacked. Catastrophic loss of data can come from fire, flood, terrorism or other causes that would impact the entire organization. In addition, data can be lost through human error such as inadvertently deleting records that shouldn't be deleted. All these risks must be mitigated. Primarily this is done through daily backups of all pertinent data. Every day, all critical data on our servers are backed up and stored off-site. We also attempt to back up the majority of our user's important data that is stored on their hard drives.

Maintenance also includes keeping all the critical software that runs on the servers up to date and functional. The services we provide include things such as E-mail, databases, anti-virus protection, Web-services and network operating system services/security. All these software packages are regularly updated. Training to keep up with these updates could easily become a constant activity.

Accomplishments during fiscal year 2009-2010 include:

- Upgraded the agency's internet connection to a 9 Megabit "Metro-Ethernet" connection, increasing capacity from 3 Mbps to 9 Mbps.
- Encrypted all agency laptops to enhance security and prevent loss of data in the event of theft.
- Assisted in the movement of PCs and network equipment from closed field offices.
- Provided after hours technical support for Oil Spill response workers.
- Standardized on remote tracking/recovery software for all new laptops.
- Expanded virtual server environment to add additional server capacity and fault tolerance.
- Currently installing cellular boosters in all conference rooms to allow use of cell based phone and data devices in these locations.
- Put out a request for proposal and awarded contract to convert mainframe SAS data to windows SAS and SQL based solution.
- Performed a major upgrade of the production mainframe hardware and software to ensure the system's continued support.
- Restored three production servers from backups after hardware failure.
- Expanded VM ware, and migrated all Virtual Servers to the new VSphere environment.
- Installed VRanger backup software for VM environment.
- Assisted in migrating computers and networking in new Grand Isle and Hammond offices.
- Started allowing smartphones other than Blackberry secure access to email servers.
- Assisted Public Information in launching a new Intranet server.

Finally, the Technical Section is responsible for maintaining the underlying network infrastructure that allows all the computers to communicate with one another. This involves monitoring the network for problems and diagnosing and repairing network routers, switches, hubs, VPN concentrators and telephone data circuits (local and for all remote facilities). Included with this is guarding the network from internal and external threats (hackers/viruses) and maintaining Internet connectivity for all internal users.

APPLICATION DEVELOPMENT SECTION

The Application Development Team consists of six employees and is responsible for maintaining all custom written applications and new application development. Our applications run on a combination of mainframe and Windows server environments. Current applications that the staff has developed and supports include:

- Web based Enforcement system for issuing and tracking violations.
- Enforcement complaint system.
- Enforcement time sheet system.
- Enforcement revocations system.
- Enforcement seafood inspection system.
- Motorboat application for issuing motorboat registrations and titles.
- Commercial License application for issuing commercial fishing licenses for LDWF.
- Training application for keeping track of mandatory and supervisory training.
- Zip code lookup application.
- Alligator system for tracking all alligators processed commercially in Louisiana.
- DPS system for looking up DMV records for residency validation.
- Lottery application to chose participants in the randomly drawn hunts.
- Hunter and Boating Education system for keeping track of participants in the mandatory hunter education program. It provides the public with the ability to request a duplicate hunting safety or boating safety card online and receive online fulfillment.
- Revocation system for keeping track of individuals that may not purchase licenses.
- Sports License (lifetime license printing).
- Web-based displaced boat lookup (to help public locate lost boats).
- Web-based DMAP, system for keeping track of deer management applications.
- Web-based Oyster Tag sales system.
- Trip Ticket employee performance system.
- Legal application for tracking legal rulings and information.
- Track commercial fishing shipments from/to the state for the Enforcement Division.
- Employee Portal application used by employees to launch other LDWF developed web-based applications.
- JEA Patrol System to keep track of Enforcement officer's contact information with vessel operators and dealers.

IMAGING SECTION

The Imaging Section consists of three employees and is tasked with scanning and indexing LDWF documents which include:

- Federally mandated Trip Ticket data (from commercial dealers, used in tracking commercial harvest information).
- Boating Safety applications.
- Hunter Safety applications.
- Bow hunter student applications.
- Enforcement complaint forms.
- Enforcement time sheets.
- Enforcement seafood inspection forms.
- Motorboat registrations & renewals (new and backlog).
- Motorboat revenue checks.
- Other revenue checks.
- Shrimp Excise Tax forms. (This helps our accounting division keep track of excise tax monies).
- Monthly submission forms.
- Crab Shedder forms.
- Commercial Fisherman surveys.
- Seafood Dealer surveys.
- Lifetime Licenses (new and backlog).
- Electronic Signature logs.

The Imaging Section takes requests from Louisiana seafood dealers in person, on the phone, by mail and by fax. These orders can be very time consuming as they often need to explain the variety of forms and their usage. The Imaging Section not only scans a vast number of documents for the agency, but verifies and corrects the data as well. This is very tedious work due to the wide ranges of handwriting and poor conditions of the forms when they arrive.

In addition to scanning duties, the Imaging Section runs nightly reports for LDWF's applications systems and helps compile and print reports for the Public Information, Enforcement, Commercial License, Hunter Safety, Motorboat and Recreational License sections. The Imaging Section is working diligently with the Fisheries Division on the Cooperative Research Survey project of 2009, concerning Hurricane Recovery and Demographic Information. This is an 89 page survey that is mailed in from commercial fishermen and dealers and compiles significant data from that time period.

The system that the Imaging Section staff maintains is used by the Motorboat section to image and archive all motorboat applications/renewals. Human Resources also images every employee document into the system. The imaging system cuts back drastically on the amount of paper documents that must be maintained, making it possible for instantaneous search/retrieval of these documents and allows multiple HR analysts to access the same records concurrently and securely.

HUMAN RESOURCES

At Wildlife and Fisheries, our most valuable resource is our human resources, the people who direct all of our other resources and get the work done on behalf of the Louisiana taxpayers, and users and consumers of Louisiana's natural resources and products.

The authorized number of funded positions for LDWF for fiscal year 2009-2010 was 775. LDWF also employed students throughout the state.

Along with our active employees, we also provide service and guidance to retirees, former employees and their dependents.

One of the responsibilities of Human Resources is the comprehensive administration of our employees' personnel actions.

Human Resources is responsible for several program areas:

- Human Resource Administration (policies and procedures, civil service rules)
- EEO Compliance (ADA)
- Performance Appraisal
- Training and Staff Development (CPTP, MST, agency sponsored training)
- Employee Relations (employee counseling, Employee Assistance Program, grievances)
- Drug Testing

- Employee Recognition Program
- Classification (position descriptions, job studies, audits)
- Wage and Salary Administration
- Recruitment Program
- Selection and Placement (LA Careers system)
- Benefit Program (health, life and miscellaneous insurance, retirement, deferred compensation, risk management compensation, leave management, unemployment, and FMLA)
- Monitoring Employee Statistics (dates of eligibility for merits, CPG levels, DROP, permanent status, contract end dates)
- Records Retention Schedule on all Employee Files
- Employment Eligibility (non-resident alien employees' taxes, work permit documents)
- Operations (employee files, personnel actions, enrollment and exiting of employees)
- Payroll Administration (ISIS system)
- Safety
- Workforce Development
- Affirmative Action

In an effort to enhance safety and productivity in the LDWF workforce, we continue to work with employees and management to develop safe and productive work conditions through several of our programs such as Safety, Planning and Performance Review and Training and Staff Development.

LICENSING

The Licensing Section serves as the information hub for more than 1 million customers who operate businesses, fish commercially, recreationally fish and hunt, and use state lands for non-consumptive purposes. The staff provides customers with state, federal and commission laws, rules and regulations that govern fishing, hunting and titling/registration of boats in Louisiana. The Licensing Section handles the issuance of all commercial licenses and boat title and registration services, issues various permits, manages the statewide electronic licensing system providing recreational license availability at more than 800 locations statewide, and oversees recreational license and boat registration renewals via internet and telephone. The Licensing Section continues to evaluate processes and streamline to improve availability and reduce processing time for licenses and boat titles and registrations.

License and boat title/registration activities and related revenue collections are as follows:

- Issue in excess of 1.68 million recreational hunting, fishing, trapping and non-consumptive use licenses sold to 800,000+ customers, generating in excess of \$18.7 million in revenue. Maintain license records for approximately 50,000 lifetime licensees.
- 67,822 commercial licenses sold, representing 13,542 commercial fishermen, 2,822 business entities, 705 charter guides, and various permits that generate in excess of \$3 million in revenue.
- 157,787 boat registration/title transactions that generate in excess of \$3.8 million in revenue. Maintain data of boats in excess of one million records - 324,802 of which are actively registered.
- Make available various types of oyster tags as required by federal and state law, in excess of 2.9 million, to oyster fishermen and processors.

FISCAL

The Fiscal Section staff consists of 17 employees who are responsible for all financial operations of LDWF. The main goal of the Fiscal Section is to achieve compliance with all applicable laws, rules, policies and regulations governing the functions managed. This section develops and implements fiscal controls, provides advice, assistance and training, and standardizes procedures. In addition, the Services Unit provides mail, receiving and duplicating services for the headquarters offices.

The functions include:

- budget and expenditure control and monitoring.
- federal grant tracking and reporting.
- preparation of all required financial reports.
- reviewing and processing professional and consulting contracts.
- payment of all vendors.
- receipt and classification of various sources of revenue.
- fund management.
- assessment of civil fines.
- telecommunications services.
- processing of employee travel reimbursements.
- liability insurance reporting.
- administration of the state's travel card.
- procurement.
- administration of the state's purchasing card.
- mail/receiving/duplicating.
- strategic and operational planning.
- management of FEMA projects.

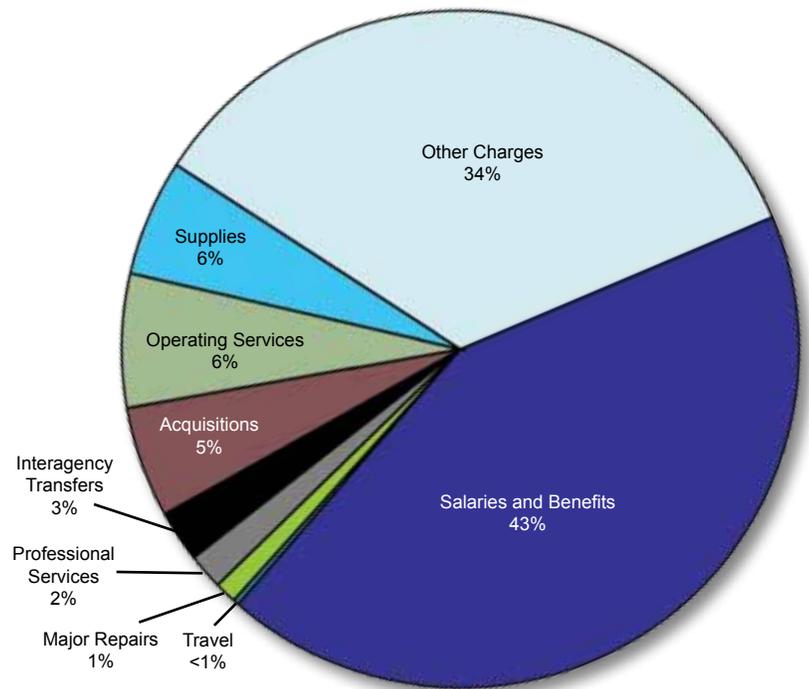
During fiscal year 2009-2010, the Fiscal Section staff:

- prepared four agency budgets consisting of six programs totaling \$182.9 million.
- reviewed 201 new contracts with a total amount payable of \$9.7 million.
- worked on four request for proposals totaling \$1.7 million.
- processed 577 payments on contracts for \$11 million.
- responded to 470 requests for telecommunications services and repairs.
- processed 14 telecommunications projects.
- processed 9,569 vendor payments.
- audited and processed 4,932 purchasing card statements.
- audited and processed 3328 travel reimbursements.
- processed 1,301 checks through QuickBooks.
- warranted funds and prepared periodic reports for 110 federal grants.
- deposited \$85.1 million in receipts from various sources on 402 pay in vouchers.
- handled 69 leases of equipment and buildings.
- maintained 728 state purchasing card accounts.
- processed over 215,000 pieces of mail.

Fiscal Year 2009-2010 LDWF Expenditures by Category (type)

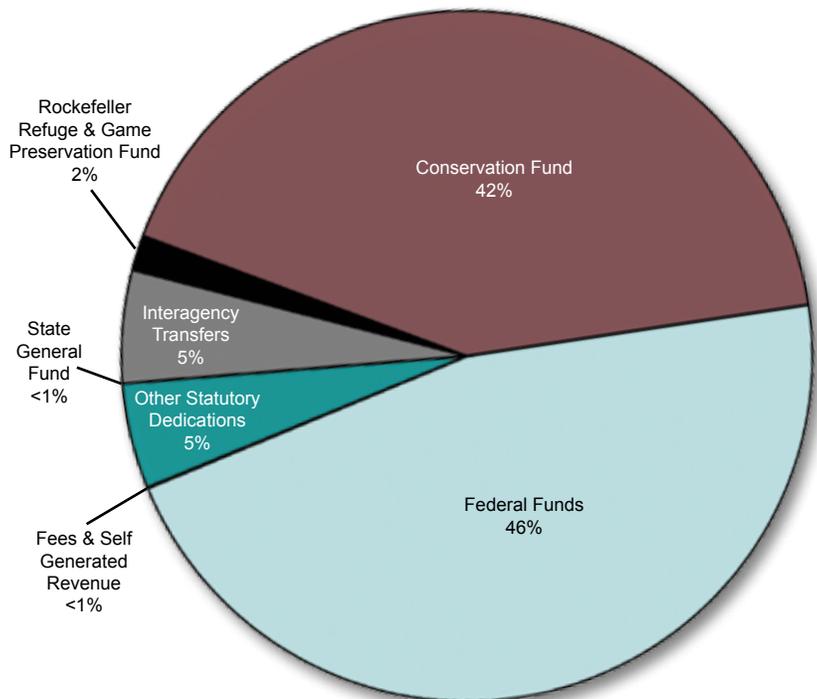
Total Expenditures = \$147,851,347

Total Positions = 783



How Fiscal Year 2009-2010 Expenditures Were Funded (Means of Financing)

Total Means of Financing = \$147,851,347



EXPENDITURES BY CATEGORY

Salaries and Benefits	63,189,703
Travel	458,314
Operating Services	9,454,952
Supplies	8,207,900
Professional Services	2,734,373
Other Charges	50,859,172
Interagency Transfers	3,807,872
Acquisitions	7,669,454
Major Repairs	1,469,607
TOTAL	\$147,851,347

HOW EXPENDITURES WERE FUNDED

Conservation Fund	61,840,459
Rockefeller Refuge & Game Preservation Fund	2,672,225
Other Statutory Dedications	7,448,085
Interagency Transfers	7,589,620
State General Fund	92,439
Fees & Self-Generated Revenue	45,847
Federal Funds	68,162,672
TOTAL	\$147,851,347

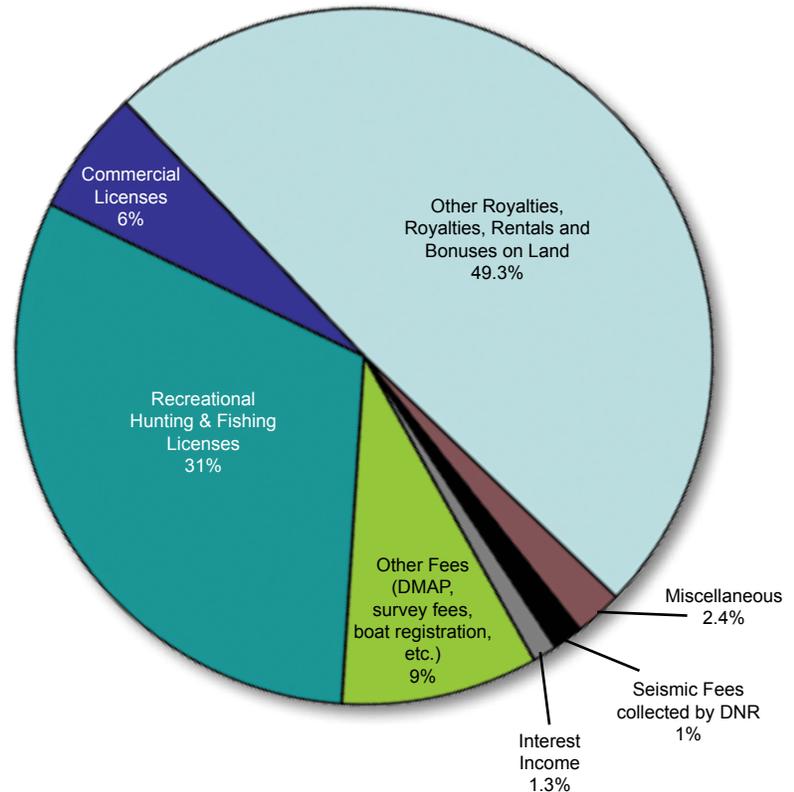
SOURCES OF REVENUE TO THE CONSERVATION FUND

Other Royalties, Royalties, Rentals and Bonuses on Land	25,565,939
Commercial Licenses	2,998,414
Recreational Hunting & Fishing Licenses	16,172,689
Other Fees (boat registrations, survey fees, DMAP, etc.)	4,652,818
Interest Income	679,297
Seismic Fees collected by DNR	595,502
Miscellaneous	1,220,210
TOTAL	\$51,885,210

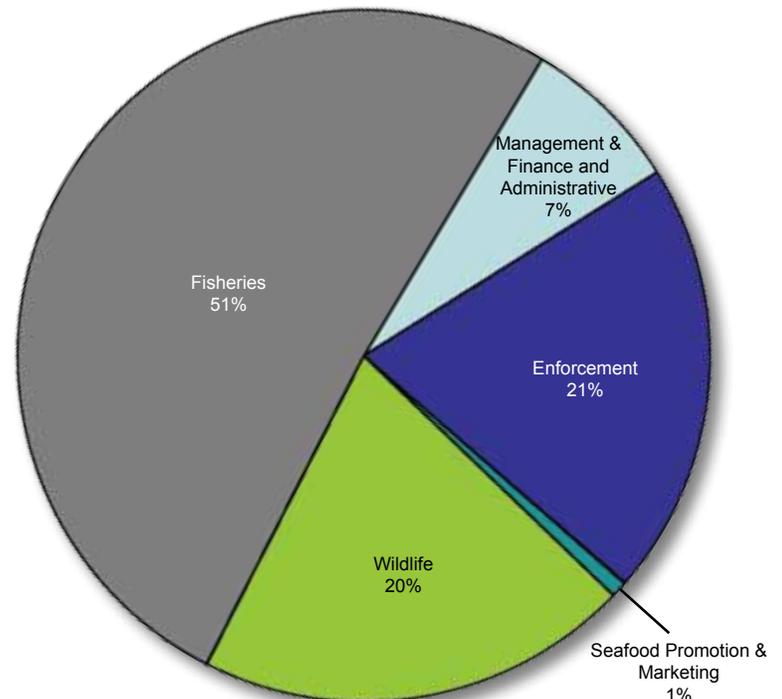
EXPENDITURES BY PROGRAM

Management & Finance and Administrative	10,956,016
Enforcement	30,287,519
Seafood Promotion & Marketing	1,038,039
Wildlife	30,051,180
Fisheries	75,509,593
TOTAL	\$147,851,347

Fiscal Year 2009-2010 Sources of Revenue to the Conservation Fund Total Revenue = \$51,885,210



Fiscal Year 2009-2010 LDWF Expenditures by Appropriated Program Total Expenditures = \$147,851,347



PUBLIC INFORMATION

The Public Information Office (PIO) handles the primary communication programs for LDWF. These programs cover a variety of communication avenues including publications, *Louisiana Conservationist* magazine, news and media relations, audio-video productions, Web site, public relations and special events. PIO consist of seven full time staff members.

During fiscal year 2009-2010, PIO underwent reorganization. The *Louisiana Conservationist* print format was discontinued, closing the editor, circulation manager and marketing manager positions. The latter two positions also carried library responsibilities. In the latter part of fiscal year 2009-2010, the Information and Resource Library was reorganized into a public self-serve "Resource Room." This option allowed public access to department materials without staff assistance. Available materials included WMA maps, regulation pamphlets and various LDWF program brochures and flyers.

The news and media relations unit was reorganized, and each primary office (Office of Fisheries, Office of Wildlife and Office of Secretary) received their own media point person. Although PIO remained as the agency's primary news and media gateway, the new media representatives were responsible for producing news for their respective offices.

PIO continued to operate and maintain the LDWF headquarters' primary reception area in Baton Rouge. This position serves as the department's front line contact and security check point. During fiscal year 2009-2010, 49,999 phone calls and 36,061 walk-in visitors were received at the reception area.

PUBLICATIONS

The publications unit is responsible for the production of specialized publications, all department regulation pamphlets and the annual report. All pre-press functions, editing and printing approvals are handled through this unit.

Specialized publications include any publication not produced on a regular basis. These publications are used for educational, informational and promotional use for conservation management programs and special events. During fiscal year 2009-2010 the unit designed and published the following publications:

SPECIALIZED PUBLICATIONS

- *Forest Stewardship* Newsletter (Winter 2010, Spring/Summer 2010)
- *Wildlife Insider* Newsletter (Winter 2010)
- National Hunting and Fishing Day 2009 (promotional materials)
- *Landowners for Wildlife* pamphlet
- Silverfin (promotional materials)
- Chili's Restaurant oil spill promotion postcard
- *Association for Conservation Information 2009 Conference* program
- *National Archery in the Schools Program* brochure

ANNUAL PUBLICATIONS

- 2008-2009 Annual Report
- Regulation pamphlets
 - 2010 Commercial Fishing
 - 2010 Recreational Fishing
 - 2009-2010 Hunting & Wildlife Management Areas
 - 2009-2010 Waterfowl
 - 2009-2010 Trapping
 - 2010 Turkey

LOUISIANA CONSERVATIONIST

The *Louisiana Conservationist* magazine produced its final printed issue in spring 2010 with plans to move the magazine to an online version in fall 2010. Subscription renewal notices were discontinued after the winter issue and refunds were issued to remaining subscribers after the spring issue. Postlethwaite & Netterville (P&N) Consulting Firm contracted with LDWF to handle the subscriber database and refund checks. P&N had previous experience with LDWF from similar situations with distribution of disaster funds.

PIO created an online Web site for subscribers to donate their refund to the department. Letters were mailed notifying subscribers of the pending refund and the option to donate with instructions for the Web site.

The new online magazine was launched in December 2010.

NEWS AND MEDIA RELATIONS

NEWS

The LDWF news service produced 258 news releases and features before the reorganization took effect in February 2010. Although news releases were written by the individual offices, PIO continued as the official depository of department news releases and Web postings.

MEDIA RELATIONS

Several media events occurred involving PIO staff as coordinators, videographers, photographers and reporters. As the lead office in coordinating media events it was PIO's responsibility to ensure the events were well organized, media were contacted, and follow-up with footage, news releases and interviews were conducted. There were five major media events during the year, not including the numerous events and media contacts associated with the Deepwater Horizon Oil Spill.

The Deepwater Horizon Oil Spill on April 20, 2010 provided the largest number of media events for the fiscal year 2009-2010. PIO lead the LDWF media team, which consisted of five PIO staff and a media representative from the Office of Fisheries, Office of Wildlife and Office of the Secretary. Between April 20 and the fiscal year-end (June 30), the LDWF media team responded to 275 media requests ranging from local contacts to international media organizations. By the time the oil well was sealed in late August, the team had responded to 525 media requests.

Media Events (other than oil spill)

- Endangered Kemp's Ridley Sea Turtle Release - Louisiana's first satellite tagged sea turtle
- Silverfin Press Conference - an introduction to a commercial and retail marketing program to reduce the population of this invasive fish species.
- Shell Donation to Artificial Reef Program - Shell donated \$450,000 to help support efforts to protect and foster fish and other marine life in Louisiana coastal waters and the Gulf of Mexico.
- Marine Research Lab, Grand Isle - Grand opening of the new marine research lab.
- Louisiana's National Hunting & Fishing Day - four statewide events open for public attendance with hands-on activities with shooting, fishing and boating.

AUDIO-VIDEO PRODUCTIONS

PIO is responsible for the production of specialized audio and video projects, video news releases (VNRs), audio recordings of various meetings, and media footage requests. The A/V library consists of 1,800 tapes of raw footage available for media and education requests. In fiscal year 2009-2010, the A/V unit began transferring archived 16mm tapes to electronic format for easier access, cataloging and better preservation. By the end of the fiscal year, approximately 50 reels were completed.

VIDEO PRODUCTIONS

- *Enforcement Cadet Commencement Ceremony*
- *Marine Research Lab, Grand Isle*
- *Salvinia Weevils Moved to Lake Bistineau State Park*
- *Port Sulphur Fish Stocking*
- *Deer Tags (update)*
- *Lake Bistineau Drawdown*
- *Louisiana's National Hunting & Fishing Day 2009*
- *Endangered Kemp's Ridley Sea Turtle Release*
- *Shell Donation to Artificial Reef Program*



PIO Audio-visual staff member documenting oil spill procedures.

- *2010 Louisiana Waterfowl Conservation Stamp Competition*
- *Silverfin: Eating Bighead and Silver Carp*
- *Red-Cockaded Woodpecker Safe Harbor Program*
- *Enforcement Oil Spill Response*
- *LDWF Begins Wildlife Rehabilitation After Gulf Coast Oil Spill*
- *LDWF Continues Search for Oil and Oiled Marine Animals*
- *Green Heron Released at Sherburne WMA*
- *Sea Turtle Rescue Rehabilitation*
- *Oil Spill Enters Pass a Loutre WMA*
- *Oil Spill and Coastal Habitat Loss (Pass a Loutre WMA)*
- *Oiled Impacted Birds Released at Sherburne Wildlife Management Area*
- *Oiled Impacted Bird Collection Continues Along Louisiana Coast*

WEB SITE

The department Web site, wlf.louisiana.gov, received over 1.7 million visits from almost 900,000 unique visitors in fiscal year 2009-2010. Site visitors executed 7.7 million page views (about 4.46 page views per visitor) and spent an average of three minutes 58 seconds on the site.

The Web site underwent a complete renovation during the second half of fiscal year 2009-2010. The renovated site was put into production and made available to the public after the conclusion of the fiscal year. Public Information Office staff selected a more modern and flexible content management system, and migrated all of the data from the previous Web site. PIO restyled and reorganized the data, working with representatives from each office during the development period.

**Top 10 Most Viewed Web Pages
(July 1, 2009-June 30, 2010)**

Page	No. of Views
Oil Spill Response	435,104
News	278,552
Deer Hunting Seasons	260,492
Migratory Waterfowl Seasons	156,622
Licensing Homepage	138,621

SPECIAL PROMOTIONS/ACTIVITIES

PIO is responsible for organizing and executing special public and promotional events for the department. The events range from trade show exhibits to organizing national conferences.

ASSOCIATION FOR CONSERVATION INFORMATION (ACI) 2009 CONFERENCE

ACI is a national association of information and education professionals representing state, federal and Canadian agencies and private conservation organizations. LDWF hosted the 2009 conference in Baton Rouge.

NATIONAL HUNTING & FISHING DAY

PIO organizes the Baton Rouge event, which is open to public attendance for hands-on experience with many outdoor activities. The 2009 event included canoeing, fishing, sports shooting, children's fishing contest, education exhibits, a catfish pool for very young anglers and taste samples of fish and wild game. The event is free of charge. Approximately 2,000 visitors attended the Baton Rouge event at the Waddill Outdoor Education Center.

SILVERFIN PROMOTIONAL CAMPAIGN

LDWF in conjunction with Chef Philippe Parola coordinated a presentation and cooking demonstration on the potential commercial and recreational markets for Asian carp (silver and bighead carp) that included efforts for re-branding the species as "Silverfin." Media representatives, outdoor writers and the Louisiana Restaurant Association members were invited to this event. Chef Cullen Lord of Flemmings Restaurant, Darryl Rivere of A la Carte Food and Chef Parola prepared Silverfin recipes for tasting. Press packets with nutritional information, history and a DVD on cleaning efforts were distributed.

2009 LAPSED ANGLER DIRECT MAIL MARKETING PROGRAM (LAP)

LDWF again partnered with the Recreational Boating & Fishing Foundation (RBFF) in 2009 as part of a national effort with 32 state fish and wildlife agencies to implement a direct mail marketing program targeting resident lapsed anglers to increase fishing license sales. The program included two separate direct mailings with coinciding local radio advertising and national print and online advertising provided by RBFF. The complete 2009 report can be viewed at www.wlf.louisiana.gov.

On May 28, 2009, 70,000 lapsed anglers were sent a postcard with a message encouraging them to once again become active anglers with an. On July 9, 2009, a second postcard was sent to those anglers who had not yet purchased a license. An incentive was offered to anglers purchasing their licenses by July 1 to encourage early action. A window decal, "Fishing is the Reel Deal," was mailed to each qualifying angler.

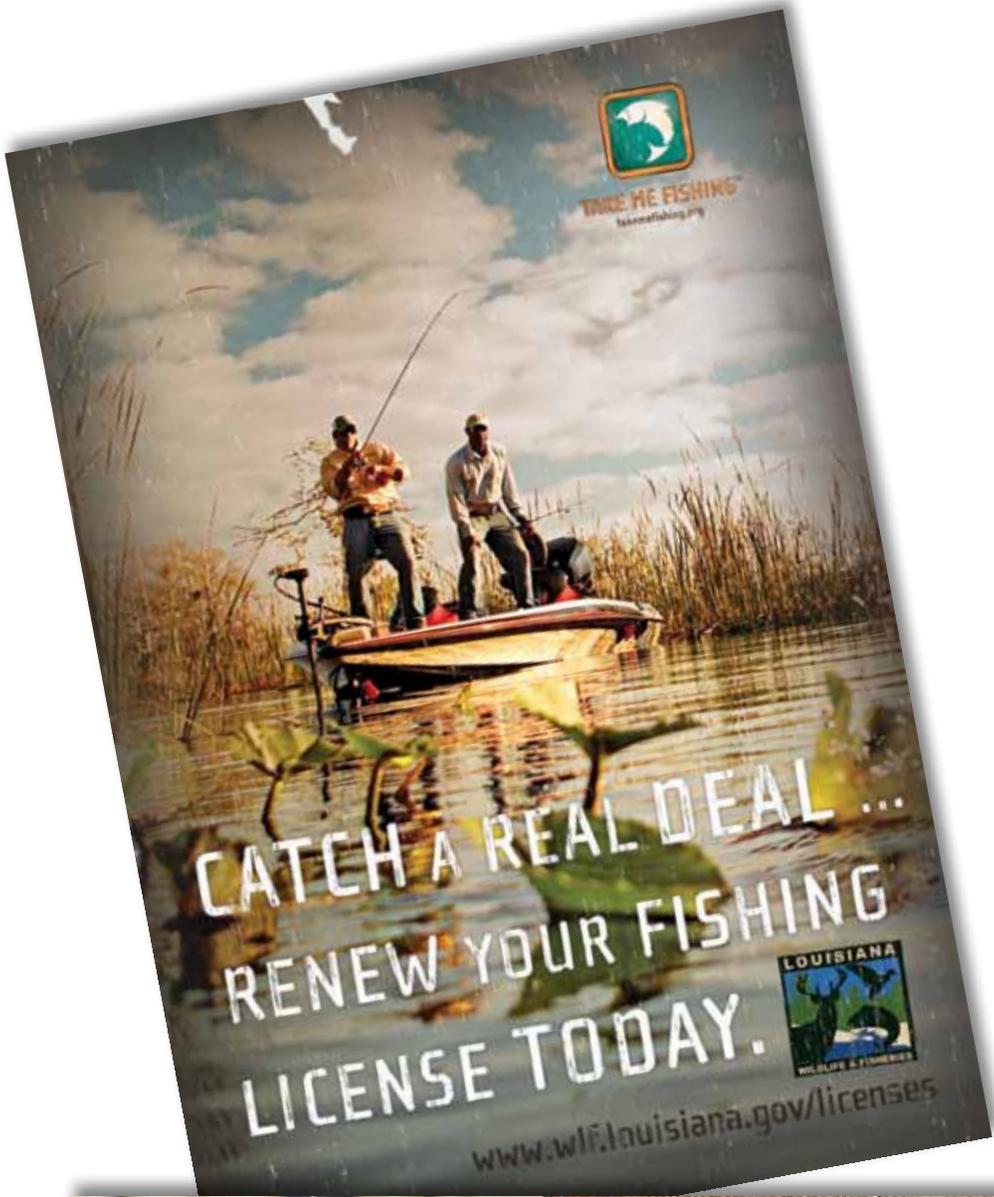
The size of the final reconciled mailing list was 63,270, after accounting for anglers who bought a license before receiving the mailing. Of the 63,270 lapsed anglers, 15,013 purchased 15,200 licenses. The overall lift during the evaluation period was 0.77. (Lift is defined as the treatment group response rate minus the control group response rate.)

- 23.73 percent response rate, which is the total number of unique individuals who responded to the mailer divided by the total number of unique individuals who received a mailer.
- The program generated \$145,785 in gross license sales revenue during the evaluation period. LDWF and RBFF invested \$88,811.69 in the program, resulting in net revenue of \$56,973.31.
- 0.77 percentage point lift in license buyers compared to a control group of lapsed anglers. This represents a marginal increase of 485 license buyers created by the lapsed angler mailing.
- \$4,713.22 in gross revenue from the lift in sales was generated by the direct mail portion of the campaign compared to direct mail costs of \$46,216.49.
- Based on their purchase history, lapsed anglers were classified into priority tiers. A "tier" reports how frequently an angler bought a license before lapsing. Six tiers showed positive lift (in percentage points), but none of the results were statistically significant.
 - Tier 3 = 2.53
 - Tier 1 = 0.88
 - Tier 7 = 0.80
 - Tier 8 = 0.68
 - Tier 4 = 0.49
 - Tier 2 = 0.30

2010 LAPSED ANGLER PROGRAM

This was the third and final year of the program. As in the past two years it included two separate direct mailings coinciding with local radio and online advertising, however, the program was interrupted by the BP oil spill. The first direct mail piece was mailed May 28. The second mail piece was scheduled for July 4 but was postponed and ultimately cancelled due to the spill. At the time this publication went to press, the final report reflecting the outcome with one direct mail piece was not available.



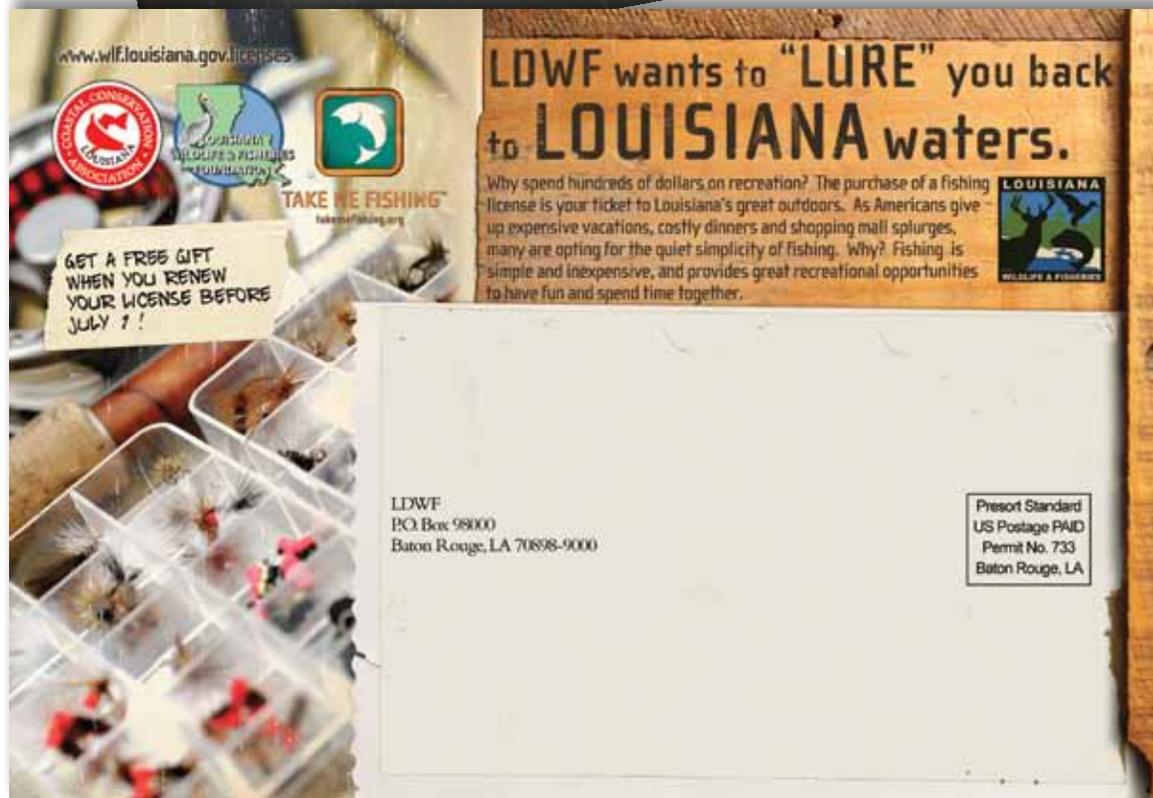


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takefishing.org

**CATCH A REAL DEAL ...
RENEW YOUR FISHING
LICENSE TODAY.**



www.wlf.louisiana.gov/licenses



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**GET A FREE GIFT
WHEN YOU RENEW
YOUR LICENSE BEFORE
JULY 1!**

**LDWF wants to "LURE" you back
to LOUISIANA waters.**

Why spend hundreds of dollars on recreation? The purchase of a fishing license is your ticket to Louisiana's great outdoors. As Americans give up expensive vacations, costly dinners and shopping mall splurges, many are opting for the quiet simplicity of fishing. Why? Fishing is simple and inexpensive, and provides great recreational opportunities to have fun and spend time together.



LDWF
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PROPERTY CONTROL

The Property Control Section is responsible for managing LDWF's Property Control, Risk Management Insurance Claims and Fleet Management programs. The section is staffed with four full-time employees.

PROPERTY CONTROL PROGRAM

During fiscal year 2009-2010 this program certified a moveable property inventory which consists of 8,670 items for a total acquisition cost of \$52,694,743.

Annually, the program is responsible for ensuring that a physical inventory of moveable property is conducted at the various 88 locations throughout the state.

The Property Control Section processed \$6,703,843 in acquisitions and \$3,481,195 in dispositions of inventoried movable property during fiscal year 2009-2010.

FLEET MANAGEMENT PROGRAM

In accordance with state fleet management regulations this section records, approves and processes requests for personal assignment or home storage, daily vehicle usage, vehicle maintenance, title, registrations and vehicle licenses for LDWF's 546 fleet and 896 other licensed vehicles.

The Property Control Section also managed the 10 vehicles assigned to the Baton Rouge Headquarters Motor Pool.

RISK MANAGEMENT PROGRAM

The Property Control Section is responsible for filing insurance claims and recovering payment from the Office of Risk Management and third party insurance companies for property damage, automobile physical and liability damage, wet marine, aviation, boiler and machinery damage. The section is also responsible for filing general liability insurance claims.

Driver's authorization and annual certification for LDWF's approximate 900 employees is also a responsibility of the Property Control section. This process is accomplished in accordance with Office of Risk Management's loss prevention guidelines.



OFFICE OF WILDLIFE

The Office of Wildlife consists of two divisions, Wildlife Division and Coastal & Non-game Resources Division.

WILDLIFE DIVISION

The Wildlife Division is responsible for the state's wildlife conservation program and gathering biological data to properly manage wildlife resources.

COASTAL & NONGAME RESOURCES DIVISION

Active marsh management is the primary responsibility of the Coastal & Nongame Resources Division. Responsibilities of the division are divided into eight major categories: Coastal Stewardship Operations; Fur and Marsh Management; Alligator Management; Permitting and Mineral Management; Rockefeller Refuge; Habitat Conservation; Education; and Maintenance.

OFFICE OF WILDLIFE ABBREVIATIONS

BP - British Petroleum

CIAP - Coastal Impact Assistance Program

CITES - Convention on International Trade in Endangered Species

CNCP - Coastwide Nutria Control Program

CWD - Chronic Wasting Disease

CWPPRA - Coastal Wetlands Planning, Protection and Restoration Act

DMAP - Deer Management Assistance Program

DU - Ducks Unlimited

ESA - Endangered Species Act

FAC - Fur Advisory Council

FEMA - Federal Emergency Management Agency

FERC - Federal Energy Regulatory Commission

FMM - Fur and Marsh Management

GCPE - Gulf Coast Plain - East

GCPW - Gulf Coast Plain - West

GIS - Geographic Information Systems

LADT - Louisiana Antlerless Deer Tag

LDNR - Louisiana Department of Natural Resources

LDWF - Louisiana Department of Wildlife and Fisheries

LNHP - Louisiana Natural Heritage Program

LSU - Louisiana State University

MAPS - Monitoring Avian Productivity and Survivorship Protocols

MAVN - Mississippi Alluvial Valley - North

MAVS - Mississippi Alluvial Valley - South

NAWCA - North American Wetland Conservation Act

NAWMP - North American Waterfowl Management Plan

NRCS - Natural Resources Conservation Service

NWR - National Wildlife Refuge

NWTF - National Wild Turkey Federation

RCW - Red-cockaded Woodpecker

RWR - Rockefeller Wildlife Refuge

SHP - Safe Harbor Program

SWG - State Wildlife Grants

USACE - United States Army Corps of Engineers

USDA - United States Department of Agriculture

USFWS - United States Fish and Wildlife Service

USCG - United States Coast Guard

WAP - Wildlife Action Plan

WCA - Wildlife Conservation Area

WMA - Wildlife Management Area

WNV - West Nile Virus

WILDLIFE

WILDLIFE RESEARCH

A wide range of research and management work is conducted in order to maintain healthy productive populations of game and to provide recreational opportunities for citizens to enjoy these species. Staff biologists gather data on game birds and animals, largely for use in formulating hunting regulations and development of habitat management recommendations. They present seminars to the public and develop workshops for personnel of the Louisiana Department of Wildlife and Fisheries (LDWF) and other agencies. In addition, the staff represents LDWF on state, regional and national committees, providing wildlife input to a wide array of public agencies, non-governmental organizations and private industry. The game species programs are:

- White-tailed Deer
- Webless Migratory Birds
- Wild Turkey and Resident Small Game
- Waterfowl
- Large Carnivore
- Nuisance Animals
- Wildlife Disease

WHITE-TAILED DEER

During the 2009-2010 deer season, 163,200 deer hunters harvested 147,300 white-tailed deer. On wildlife management areas (WMAs) during managed deer hunts, there were 2,603 deer harvested. The total hunter effort (a hunter having used a WMA for a hunt) for the managed deer hunts was 27,643. The combined Deer Management Assistance Program (DMAP) and Landowner Antlerless Deer Tag (LADT) harvest was 17,641 deer. There were over 800 clubs/cooperators with 1.6 million acres participating in the programs.

Deer harvest information from across the state was analyzed and evaluated. These data were used to establish deer seasons for the 2010-2011 season. Harvest data for WMAs and DMAP cooperators are summarized in Federal Aid W-55-24 Report.

Qualifying deer, those scoring high enough for the Louisiana big game records recognition program, harvested during 2009-2010 were documented in the annual Deer Report. Trophy deer that qualify for the State Record List are added to this list annually.

In order to better manage the state's white-tailed deer population, several research projects have been initiated. Efforts by the Coastal and Nongame Resources Division to capture and mark deer at Pass-a-Loutre WMA continue. Thirty-eight deer have been ear tagged and are being monitored by remote cameras. The Avoyelles Parish project to determine survival, mortality and antler growth characteristics of deer in a large enclosure compared to

free ranging deer continues, but trapping success inside the enclosure has been limited. The north Louisiana telemetry project, performed in cooperation with the Louisiana State University (LSU) School of Renewable Natural Resources, is nearing completion. A total of 61 deer have been captured and marked. Telemetry locations are taken two to three times weekly. The Union Parish project was initiated to provide base line information on survival, mortality and home ranges of deer in pine habitat. Disease and parasite investigations continued on both private and public lands.

WEBLESS MIGRATORY BIRDS

Dove

Dove populations have been monitored nationwide since 1953 by a call-count survey. This survey is used by the U.S. Fish and Wildlife Service (USFWS) to monitor mourning dove population trends. Biologists record the number of doves heard calling for a prescribed time during the nesting season along certain roadsides. Louisiana's dove population is monitored during May and June along 19 routes randomly located throughout the state. The 2010 Louisiana breeding population index, based on doves heard along the routes, was 13.9. This represents a 0.7 percent increase in doves heard from 2009. The 10-year and 40-year trends illustrated 1.8 percent and 1.9 percent increases annually, respectively. The 10-year and 40-year trends for doves seen along routes illustrated 2.9 percent and 2.4 percent increases annually, respectively.

Dove hunting regulations for Louisiana in 2009-2010 were set at 70 days with a bag limit of 15 birds. A survey of resident license holders indicates that approximately 32,800 Louisiana hunters harvested approximately 604,500 doves during the 2009-2010 hunting season. An estimated 18,700 Eurasian collared-doves were also taken.

In addition to dove fields on 11 WMAs, LDWF leases property from private landowners for public hunting. This land is leased for public hunting on opening day only. In 2009, one field totaling 800 acres was leased. During the opening weekend hunt, 414 hunters participated, bagging 1,503 doves.

In the spring of 2003, USFWS adopted a National Mourning Dove Harvest Management Plan. Determining current harvest rate in each management unit was identified as a key component of the plan. Wildlife Division personnel banded 2,031 doves during July-August 2009 as part of a national effort to provide information needed to develop harvest rate estimates for mourning doves. Another aspect of this study has been the development of production indices from mourning dove wings collected from hunters. A Wildlife Division biologist participated in the annual Mourning Dove Wing Bee held in Missouri.

During a three-day period, state and federal biologists from across the country aged more than 50,000 wings.

Data are summarized in the Federal Aid W-55-24 Annual Report.

Woodcock

A woodcock banding program was initiated in 1990 to determine sex and age ratios, site fidelity, movement patterns and harvest rates of woodcock wintering in Louisiana. From December 2009 through February 2010, 186 woodcock were banded statewide. Of these, 77 were banded on Sherburne WMA and 109 on three other sites, but primarily Red River WMA and Tensas River National Wildlife Refuge (NWR). An additional eight birds banded in prior years were also recaptured (two on Sherburne and six on Red River). Five direct band recoveries and two indirect (one or more years after banding) were reported. All five direct recoveries by hunters were originally banded and taken on Sherburne WMA. One of the direct recoveries was found dead in Michigan in April. Indirect recoveries were recovered from New York and Michigan. Data are summarized in the Federal Aid W-55-24 Annual Report.

LDWF participated in the USFWS Annual Woodcock Wing Bee in 2009. Data derived from aging and sexing about 12,000 woodcock wings were used to develop trend data on woodcock production and hunter success. These data, in combination with breeding bird surveys, are used to develop management strategies for woodcock. Although many people in Louisiana consider woodcock an under-utilized species, Louisiana's harvest of woodcock at one time ranked among the nation's highest. However, the number of woodcock hunters has decreased by over 90 percent since their peak in the early 1980s. Nonetheless, Louisiana still consistently ranks fourth in the nation for woodcock harvest. A survey of resident license holders indicates that approximately 3,600 Louisiana hunters harvested 12,900 woodcock during the 2009-2010 season.

WILD TURKEY AND RESIDENT SMALL GAME

Wild Turkey

A poult production survey was initiated in 1994 to assess annual brood rearing success and monitor long-term production trends. The 2009 survey indicated a good hatch in the west central region. A fair hatch was observed in the southeast and south Mississippi/Atachafalya regions. Poor production occurred in the northwest and north Mississippi River floodplain.

The most recent hunter harvest survey indicated 17,500 turkey hunters harvested 5,600 wild turkeys during the spring of 2009. The wild turkey population in Louisiana is estimated at about 60,000 birds.

LDWF is involved in two major wild turkey research projects. LDWF is supporting a wild turkey research project on Sherburne WMA in conjunction with the LSU School of Renewable Natural Resources, with additional

support from the National Wild Turkey Federation (NWTf). This project is investigating the influence of land management activities on raccoon predation of wild turkey nests. LDWF is also engaged in banding gobblers throughout the state. Banding gobblers, and subsequent reporting by hunters of banded gobblers they harvest, provides information needed to estimate wild turkey harvest rates throughout the state.

Quail

Statewide fall whistling counts were conducted on 34 randomly located routes and an additional five routes on LDWF WMAs and the Kisatchie National Forest. All regions of the state were unchanged from the prior year, except for the northwest region which recorded a statistically significant increase. However, all regions exhibited long-term (1983-2009) declines. A spring bobwhite survey was also conducted on the Sandy Hollow WMA. Inferences about population status and habitat conditions were developed based on the combined results of these survey techniques and general observations by LDWF personnel during the breeding season. Data are summarized in the Federal Aid W-55-24 Annual Report.

A survey of resident license holders indicates that approximately 1,100 Louisiana hunters harvested 5,100 wild quail during the 2009-2010 season. Hunters were also asked about their harvest of pen-raised quail. About 1,800 hunters harvested over 34,100 pen-raised quail.

LDWF continues to work with its partners to address the decline in bobwhite populations. Habitat development efforts using U.S. Department of Agriculture (USDA) Farm Bill programs and the State Wildlife Grant (SWG) Program have been developed and were operational in 2009-2010.

WATERFOWL

Louisiana has approximately 3.5 million acres of coastal marsh that winter large and diverse waterfowl populations. Aerial waterfowl inventories of the entire coastal marsh, as well as associated agricultural lands in north central and northeast Louisiana, are conducted each winter.

The mid-winter inventory conducted in early January 2010 indicated 3.43 million ducks and 685,000 geese wintered in coastal marsh and inland areas of the Mississippi Delta.

Based on federal harvest estimates from the 2009-2010 waterfowl hunting season, 80,000 active duck hunters harvested 1.85 million ducks. This represents a 16 percent increase in the number of duck hunters and a 6 percent increase in duck harvest compared to the previous year. Species composition included 29 percent blue-winged teal, 20 percent green-winged teal, 15 percent gadwall, 9 percent wood duck, and 8 percent mallard. Mottled duck, pintail, shoveler, wigeon, scaup, ring-necked duck, canvasback and redhead comprised the remainder.

Louisiana goose hunters harvested 74,000 geese during the 2009-2010 waterfowl hunting season, a 51 percent decrease from the previous year. Spring ice-out on arctic breeding grounds was over 30 days late, resulting in virtually no reproduction for goose populations that winter in Louisiana and thus poor hunting. White-fronted geese comprised 45 percent of the harvest and light geese (snow and Ross') comprised 54 percent. Canada geese are a locally important bird in the bag, but comprised less than 2 percent of the total statewide goose harvest.

North American Waterfowl Management Plan (NAWMP)

Louisiana continues to play an important role in NAWMP. Louisiana's successful role in NAWMP is largely due to the strength of our partnerships with the Gulf Coast and Lower Mississippi Valley Joint Ventures. LDWF strives to maintain ongoing projects and other activities associated with NAWMP. In fiscal year 2009-2010, the Russell Sage WMA North American Wetland Conservation Act (NAWCA) grant enhancement project was completed. This enhancement work included rebuilding the levees on the greentree reservoir and replacing six dilapidated water control structures. This work was needed to ensure the levee and structures continued to function and prevent timber damage. An additional NAWCA grant enhancement project on Sherburne WMA will be initiated and completed during summer 2011. This project includes installation of two wells and two water control structures on 349 acres of moist soil habitat. The addition of the two wells will provide a dependable source of water for the three units and allow managers to flood the units in late summer for early migrating waterfowl and shorebirds. Planning and engineering to repair flood damage that occurred during winter 2008-2009 on Boeuf WMA's Crow Field Unit was completed. Construction will be completed during fall 2010. This project was built using NAWCA and Federal Emergency Management Agency (FEMA) funding; however, additional work was needed on the spillway and levees due to flood damage.

LDWF provided funding, equipment, personnel and/or coordination on a waterfowl research project of high priority to NAWMP joint ventures in Louisiana. Bruce Davis and Dr. Frank Rohwer completed the final year of their three-year mottled duck telemetry study in southwestern Louisiana. Davis tracked radio-marked female mottled ducks and found high use of intermediate marsh during March and April and a shift to freshwater marsh during May and June. Hurricanes Ike and Gustav provided an opportunity to document movements of radio-marked mottled ducks due to hurricane effects. Results indicated mottled ducks generally moved north into unaffected freshwater marsh and agricultural areas in response to hurricane storm surge. Comparisons with movement data from 2009 reveal similar movement patterns in a non-hurricane influenced year. Experimental pair counts revealed high pair counts in fresh marsh habitats. This study supports the need for habitat conservation efforts to preserve the natural salinity gradient along the Louisiana Gulf Coast.

Efforts to chemically and mechanically treat invasive vegetation on Catahoula Lake were successful due to favorable lake levels and weather. The U.S. Army Corps of Engineers (USACE) recently awarded LDWF with a permit to research the efficacy of bulldozing to control invasive woody vegetation that is too large to spray or mow. LDWF also initiated a cooperative research effort with LSU to study the hydrology and vegetative response on Catahoula Lake.

The Louisiana Waterfowl Project entered its 19th year providing private landowners compensation to voluntarily engage in wetland development projects. This is a cooperative statewide program involving LDWF, Ducks Unlimited (DU), USDA Natural Resources Conservation Service (NRCS), USFWS and interested private landowners. During 2009-2010, 6,546 acres were restored or enhanced, technical assistance was provided on 81,442 acres, and 2,396 acres were under consideration for perpetual conservation easements. To date, the Louisiana Waterfowl Project has restored or enhanced over 100,118 acres and provided technical assistance on 732,685 acres. Future Louisiana Waterfowl Project activities will increase emphasis on marsh management needs, creation of natural wetlands habitat in south Louisiana, and development of conservation easements for important bottomland hardwood forest tracts in north Louisiana.

Wood Ducks

During 2009, LDWF banded 875 wood ducks, well below the 1,334 banded the previous year. Banding efforts were hampered by forest damage remaining from the 2008 hurricanes and late summer flooding of most banding sites. Approximately 378 wood ducks were captured in nesting boxes and 497 were captured using rocket nets.

The wood duck nest-box program completed its 21st year in 2010. LDWF personnel are maintaining 2,160 boxes currently in use. That is substantially fewer than the peak of 2,800 statewide a few years ago but is up slightly from the 2,100 last year as we:

1. continue to rebuild and install boxes to replace those lost from hurricane-related damage in 2005 and 2008, and
2. expand participation in the Private Lands Program.

Indeed, LDWF's focus is to replace old boxes that are productive, move boxes that are not successful into more productive habitat, and continue to expand the number of boxes in the Private Lands Program. Utilization is monitored currently at 1,900 boxes. Utilization has ranged from 45-100 percent in past years with an average utilization of about 80 percent.

LARGE CARNIVORE PROGRAM

Bear Research

The Louisiana black bear is designated as a threatened species under the Endangered Species Act (ESA). LDWF's bear research efforts are targeted at gathering information that will enable the department to remove the Louisiana black bear from the threatened list and to effectively manage for sustainable black bear populations.

Tensas River Basin

Primary activities at the Tensas study area included construction and monitoring of hair-trapping stations, live trapping to deploy GPS collars, and monitoring radio-collared females to determine survival and reproductive status on Tensas River NWR, Big Lake WMA, Buckhorn WMA and adjoining private lands. Hair-trapping is a technique that involves using barbed wire to snag hair from bears visiting bait sites. DNA analysis of the hair samples is used to identify individual bears and develop population estimates. Construction of 209 hair-trapping stations began May 17, 2010 and was completed May 28, 2010. Initial baiting of sites took place during the week of May 31, 2010 and sample collection began on June 7, 2010. During the first four one-week collection periods, samples were collected from 160, 169, 173 and 167 stations per week, respectively, resulting in an average of 1,104 total samples collected each week. Samples will be selected and sent to Wildlife Genetics International for DNA extraction and genotyping.

Upper Atchafalaya River Basin

Primary activities on the Upper Atchafalaya study area involved construction and monitoring of hair-trapping stations and live trapping to deploy GPS collars. Construction of 115 hair-trapping stations began May 10, 2010 and was completed May 30, 2010. Initial baiting of sites took place during the week of May 31, 2010 and sample collection began on June 7, 2010. During the first four one-week collection periods, samples were collected from 54, 79, 73 and 87 stations per week, respectively, resulting in an average of 455 total samples collected each week. Likewise, samples will be selected and sent to Wildlife Genetics International for DNA extraction and genotyping.

Lower Atchafalaya River Basin

During April, permission was obtained from 37 landowners to access private properties within the study area, locations of hair-trapping stations were determined, and supplies were purchased. Construction of 119 hair-trapping stations began May 17, 2010 and was completed June 12, 2010. Initial baiting of sites took place during the week of June 7, 2010 with sample collection beginning on June 14, 2010 and continuing for eight weeks. Samples were collected from an average of 38 stations per week. A total of 672 samples were collected over the eight-week sampling period with an average of 84 samples collected per week.

Bear Management

Bear Safety In Mind

The Bear Safety In Mind Program is a cooperative program with St. Mary Parish government. The goal of the program is to inform and work with parish residents to minimize or avoid conflicts with bears. As part of this effort, an additional 900 bear proof garbage cans were obtained and distributed in targeted areas of St. Mary Parish.

Mortality

A total of 31 bear mortalities were documented in 2010.

Conflict

There were a total of 22 management captures of bears for nuisance behavior.

URBAN AND NUISANCE WILDLIFE

The Urban and Nuisance Program coordinates the permitting and issuance of various permits. Nuisance Wildlife Control Operator permits and Nuisance Animal Control permits are issued by the section to qualified professionals and to private individuals who are having problems with nuisance wildlife and are deemed capable of taking care of the problems on their own. In fiscal year 2009-2010, there were 47 Nuisance Wildlife Control Operators and 61 Nuisance Animal Control permits issued. The Urban and Nuisance unit is also responsible for issuing Wildlife Rehabilitation permits, Special Purpose and Possession, and Nongame Quadruped Exhibitor and Breeder permits. In fiscal year 2009-2010, 56 Wildlife Rehabilitation permits, 15 Special Purpose and Possession permits, and 28 Non-game Quadruped Breeder and Exhibitor permits were issued. The largest portion of daily activity includes technical and general assistance provided to the public, other governmental agencies and non-governmental organizations regarding nuisance animals and injured wildlife. A total of 397 calls were handled by this program in fiscal year 2009-2010. The Urban and Nuisance Wildlife Program was discontinued in January 2010. Nuisance wildlife calls were handled by field office staff and referred to Nuisance Wildlife Control Operators if further assistance was needed.

WILDLIFE DISEASE

The statewide Wildlife Disease Program was administered by the State Wildlife Veterinarian.

Chronic Wasting Disease (CWD) surveillance continued as 600 samples were submitted from all regions of the state to the Southeastern Cooperative Wildlife Disease Study laboratory. Samples were collected from hunter-killed deer which are considered low probability samples, as well as from road-killed, pen-killed and taxidermy specimens which are considered high probability samples. All samples tested negative for CWD.

Surveillance for Avian Influenza also continued. During the sampling process, 750 migratory ducks were tested for the disease. The majority of the birds were hunter-killed birds. Biologists also combined efforts during wood duck banding efforts to acquire Avian Influenza samples from banded birds. Samples were tested at the Louisiana Animal Disease Diagnostic Laboratory in Baton Rouge, La. No birds tested positive for Highly Pathogenic Avian Influenza.

Due to the propensity for propagating and spreading diseases of zoonotic concern and of concern to commercial swine farmers, legislation was introduced in the 2009 legislative session to prohibit free-ranging domestic swine and to allow night hunting for feral swine during the closed deer season. Surveillance of 142 feral swine for Brucellosis and Pseudorabies revealed a 2 percent inci-

dence of both diseases. Surveillance efforts will continue. In addition, LDWF cooperated with LSU and University of Louisiana at Monroe graduate students to investigate seasonal and regional variations in the stomach contents of feral swine, as well as reproduction in feral swine.

In addition to numerous individual disease cases, the State Wildlife Veterinarian and LDWF biologists investigated an Avian Cholera outbreak near Houma, La. which was responsible for the deaths of approximately 3,000 coots, and a case of lead intoxication which was responsible for the deaths of approximately 600 snow geese near Gueydan, La.

LAND DEVELOPMENT & MANAGEMENT

Land development and management includes activities and programs that impact wildlife habitat on private lands, as well as the management of LDWF's 52 WMAs. Prior to fiscal year 2009-2010, the state was divided into seven regions for Wildlife Division administrative purposes. In fiscal year 2009-2010, the Wildlife Division was reorganized and staff were assigned to ecoregions (Gulf Coastal Plain or Mississippi Alluvial Valley).

Within each ecoregion, personnel were assigned to either the WMA or Private Lands Program. This new structure enables staff to focus efforts on management of WMAs and enhances delivery of services to private landowners and managers.

LAND ACQUISITION

Land acquired for the express purpose of establishing WMAs and refuges is the most effective means to protect, conserve, replenish and manage the natural resources and diverse wildlife habitat of the state. LDWF acquired 3,828.25 acres of land during fiscal year 2009-2010.

Through a grant funded by USFWS, namely NAWCA, LDWF added two tracts of land known as Dendiger I and Dendiger II comprising 338 acres and 2,538 acres, respectively, to the Joyce WMA in Tangipahoa Parish.

A 20-acre tract, known as Rosedale in Iberville Parish, was acquired from a private seller and added to the Sherburne WMA. LDWF also added 931 acres to the Little River WMA in Grant Parish to provide recreational opportunities and to conserve the state's diverse wildlife resources indigenous to that area. Lastly, LDWF acquired ownership of a 1.25-acre facility used as the headquarters for the operations and management of the Red River WMA in Concordia Parish.

PRIVATE LANDS PROGRAM

The private lands program offers technical assistance to landowners, land managers, hunting clubs and others who desire to improve habitat and/or manage wildlife on their property. Assistance can vary from answering simple questions to a comprehensive written management plan. Assistance is not only available for traditional game species such as deer, ducks and turkeys, but includes all wildlife and their habitats - from hummingbirds to long-leaf pine savannahs.

Many landowners are already working with a natural resource professional, such as a consulting forester, or are enrolled in state or federal programs such as DMAP, Forest Stewardship and/or USDA NRCS programs such as the Wetland Reserve Program, Conservation Reserve Program or Wildlife Habitat Incentives Program. LDWF private lands biologists cooperate with other natural resource professionals to achieve the landowner's objectives. Most importantly, landowners are encouraged to develop a cooperative relationship with LDWF private lands biologists and other natural resource professionals. Wildlife habitat is dynamic, and with the assistance of knowledgeable wildlife professionals, landowners can provide productive habitat for wildlife while meeting other goals they may have, such as income generation and recreational opportunity.

During fiscal year 2009-2010, private lands program biologists wrote 50 management plans, affecting 28,775 acres. They conducted 78 site visits with landowners affecting 110,625 acres, and responded to 2,288 requests for information. Under an agreement with USDA NRCS, private lands biologists conducted 172 inspections of Wetland Reserve Program properties.

Private lands program biologists are also responsible for carrying out activities such as duck and dove banding, wildlife surveys, collection of biological data for research, habitat evaluations, issuing of alligator tags, delivery of DMAP/LADT, and public outreach. Private lands biologists also responded to the MC252 (BP Deepwater Horizon) oil spill.

WILDLIFE MANAGEMENT AREAS

The Wildlife Division was re-organized in fiscal year 2009-2010 in an effort to efficiently deliver statewide programs including the WMA program. This reorganization included the assignment of four biologist managers in four ecoregions to administer the WMA program within that region. The ecoregions consist of:

- Gulf Coastal Plain-West
- Gulf Coastal Plain-East
- Mississippi Alluvial Valley-North
- Mississippi Alluvial Valley-South

Gulf Coast Plain - West (GCPW) WMAs

- Alexander State Forest
- Bayou Pierre
- Bodcau
- Camp Beaugard
- Clear Creek
- Elbow Slough
- Fort Polk
- Jackson-Bienville
- Loggy Bayou
- Marsh Bayou
- Peason Ridge
- Sabine
- Sabine Island
- Soda Lake
- Walnut Hill

- West Bay
- Union

Total of 385,298 Acres

Habitat ranges from extensive coastal marshes, to prairies and vast agricultural areas, to hardwood bottoms, to rolling hills of pine plantations, and mixed pine-hardwoods.

The WMAs are managed to provide diverse wildlife habitat that supports numerous game and non-game wildlife and provides quality outdoor recreational opportunities for the public. A total of 180,673 user days were estimated for GCPW WMAs. Managed deer hunts were conducted on several of the WMAs to collect accurate information on herd health and hunter success rates.

Special guided youth-only lottery turkey hunts were conducted on Ft. Polk, Jackson Bienville, Loggy Bayou and Union WMAs. In addition to the regular physically challenged hunts scheduled on several WMAs, a lottery physically challenged hunt was conducted on Sabine WMA. The Sabine physically challenged hunt is done in conjunction with the local organization known as H.E.L.P. (Hunters Enriching the Lives of People). Persons participating in the hunt are fed, provided transportation to blinds, assisted with recovering/cleaning deer, and any special needs. The hunt is intended to get people into the field that may not otherwise have an opportunity to hunt.

The WMAs are managed for a variety of fish and wildlife and to provide outdoor recreational opportunities. These areas are readily accessible and are very popular with the public. Along with public hunting and fishing opportunities, these areas provide many types of non-consumptive activities. Four wheelchair-bound hunting blinds were built in the "Limited Use Area" of Clear Creek WMA, and two were built on Alexander State Forest WMA which provided deer and turkey hunting opportunities for qualified hunters.

The WMAs are leased free of charge to LDWF for public use from private landowners (Forest Capital Partners LLC, Roy O. Martin, U.S. Army, U.S. Forest Service, Forest Investments, Calcasieu School Board, Molpus, and the State of Louisiana). To continue these lease areas, region personnel are required to meet and negotiate annual agreements with the landowners. The leases help the landowners to properly manage and maintain their properties for wildlife and public recreation.

GCPW personnel administered a variety of Wildlife Division activities. These include environmental assessments, technical assistance, research, planning, development, management, and alligator and nuisance animal programs. Technical advice is provided to the public, NWRs, and state, federal and local agencies. GCPW handled a large number of resident alligator hunting applications issuing public lake and private land licenses, as well as processing nuisance complaints.

Personnel also reviewed and monitored oil and gas exploration activities and interstate pipeline installations on several GCPW WMAs. Haynesville Shale gas production/exploration on Loggy Bayou and Bayou Pierre WMAs created a heavy demand on the time of the GCPW WMA Biologist Supervisor located in the Minden office. A minimum of 50 percent of his workload was related to mineral production.

GCPW WMA personnel participated in the MC252 (BP Deepwater Horizon) oil spill response effort.

Gulf Coast Plain - East (GCPE) WMAs

- Ben's Creek
- Hutchinson Creek
- Joyce
- Lake Ramsey Savannah
- Manchac
- Maurepas Swamp
- Pearl River
- Sandy Hollow
- Tangipahoa Parish School Board
- Tunica Hills

Total of 164,837 acres.

Habitat types range from marshes and swamps, to rugged loess bluff uplands.

The WMAs are open for public use such as hunting, fishing, bird watching, sightseeing, boating, hiking, horseback riding, photography and berry picking, as well as many other outdoor recreational activities. Over 116,869 user days were recorded on the WMAs during fiscal year 2009-2010. An alligator season was open on four WMAs with a harvest of 272 alligators by 13 commercial alligator trappers. To facilitate recreational alligator harvest, 30 additional people were selected by lottery to harvest up to three alligators each on the Pearl River and Joyce WMAs. The recreational hunters harvested 65 alligators. WMA personnel began posting some 2,729 acres of new WMA lands acquired during the year, as well as maintaining existing WMA boundaries, buildings, equipment, roads and trails. Managed public hunts were also conducted on several region WMAs.

On the Sandy Hollow WMA, 1,156 acres of longleaf pine habitat were enhanced by prescribed burning. Three miles of bird dog field trial courses were maintained, as well as six dove fields and 10 acres of upland bird food plots. In addition, 272 acres were prescribed burned on the Lake Ramsay WMA by The Nature Conservancy. There were 600 longleaf seedlings planted on Lake Ramsey as part of the on-going longleaf pine restoration project.

GCPE personnel maintained 198 wood duck boxes, participated in the statewide mourning dove banding program, responded to numerous deer and nuisance animal complaints, provided technical assistance to the public, conducted public meetings, and collected white-tailed

deer brain and lymph node samples across the region for CWD testing. GCPE personnel continued to work with the deer program manager to collect deer reproductive data to better pinpoint peak deer breeding periods within the region.

Feral hogs that can threaten native wildlife populations continue to expand in many parts of the region. Aggressive control methods have been used on certain WMAs, such as Pearl River, to reduce their numbers. Each year, feral hog blood samples are tested for a variety of diseases.

GCPE WMA personnel played a major role in the MC252 (BP Deepwater Horizon) oil spill response effort.

Mississippi Alluvial Valley - North (MAVN) WMAs

- Bayou Macon
- Big Colewa Bayou
- Big Lake
- Boeuf
- Buckhorn
- Floy Ward McElroy
- Ouachita
- Russell Sage
- Sicily Island

Total of 112,697 acres.

The primary habitat type found on MAVN WMAs is the Mississippi River Alluvial Valley bottomland forest. Several of the WMAs feature reclaimed agricultural lands which have been reforested with bottomland forest hardwood species. Moist soil management units and greentree reservoirs are managed to provide habitat for waterfowl and other wetland birds.

MAVN biologists conducted a wide range of activities including research and surveys involving mourning doves, Canada geese, wood ducks, wild turkey, bald eagles, bobwhite quail, shorebirds, white-tailed deer and other species. Additional effort was expended conducting public meetings, interacting with various universities as well as parish, state and federal agencies in reference to projects of mutual concern, conducting the alligator management program at the eco-region level and numerous additional projects.

MAVN WMAs were managed to provide habitat for deer, turkeys, squirrels, waterfowl, rabbits, doves, shorebirds and other non-game birds, furbearers, as well as other species. Recreational opportunities were provided to thousands of hunters, fishers, campers, sightseers and other public users. Recreational user days recorded for MAVN WMAs exceeded 88,000. Deer hunting was extremely popular with 18,804 hunters harvesting 1,095 deer during the either-sex gun, primitive weapon and archery hunts. Youth deer and dove hunters on Big Lake, Boeuf, Buckhorn, Russell Sage and Floy McElroy WMAs had a successful season. Deer and waterfowl hunting opportunities were provided for wheelchair con-

finer hunters on Big Colewa Bayou, Buckhorn and Ouachita WMAs. Turkey hunting was provided on Bayou Macon, Big Lake, Boeuf and Sicily Island Hills WMAs. Big Lake, Boeuf, Buckhorn, Ouachita and Russell Sage WMAs provided quality waterfowl hunting for 9,777 hunters, including some who traveled from Missouri, Arkansas, South Carolina, Mississippi, Texas, Georgia, North Carolina and Indiana. A total of 6,377 small game hunters enjoyed squirrel and rabbit hunting.

MAVN WMA technicians performed a variety of development and maintenance functions such as boundary marking, road maintenance, water control structure operation, moist soil management, timber marking, shorebird management, beaver and other nuisance animal control, farm contract supervision, equipment maintenance, public user data collection, vegetation control, food plot planting, and reforestation. They also assisted biological staff in conducting managed hunts and research projects. One new public parking area was constructed on Ouachita WMA.

The "Wish I Could ATV Trail Ride," an annual one-day ATV trail riding event, was held on Boeuf WMA on June 5, 2010. The event attracted 2,024 ATV riders who entered the WMA to ride the 17-mile long trail. This ATV trail ride is sponsored by a charitable organization and is legislatively mandated. Even though this event is extremely popular, it has caused extensive ecological damage to hundreds of acres of bottomland hardwood habitat, virtually destroying the original ATV trail.

MAVN WMA personnel participated in the MC252 (BP Deepwater Horizon) oil spill response effort.

Mississippi Alluvial Valley - South (MAVS) WMAs

- Acadiana Conservation Corridor
- Attakapas
- Dewey W. Wills
- Elm Hall
- Grassy Lake
- Little River
- Pomme de Terre
- Red River
- Sherburne
- Spring Bayou
- Thistlethwaite
- Three Rivers

Total of 244,010 acres.

Catahoula Lake is an additional area of responsibility.

One USFWS Refuge (Atchafalaya NWR) and two USACE properties (Bayou des Ourses and Shatters Bayou) are also managed within the MAVS.

Habitat types range from mixed pine-hardwoods to back-water bottomland hardwoods interspersed with agricultural lands, and cypress-tupelo swamps to open-water areas.

MAVS personnel administer and manage a variety of wildlife oriented activities. Region personnel work in conjunction with and provide technical advice to many different agencies, including other state agencies, USFWS, USACE, Louisiana Department of Natural Resources (LDNR), Louisiana Department of Environmental Quality, USDA, and local parish entities. MAVS personnel helped administer alligator and nuisance animal programs. Personnel assisted with program projects such as dove and wood duck banding, as well as deer, woodcock, turkey, black bear and nongame research projects.

The WMAs are maintained and managed to provide outdoor recreation opportunities for all user groups, including both consumptive and non-consumptive. WMA personnel performed a variety of development and maintenance functions such as boundary marking, building maintenance, road maintenance, water control structure operation, moist soil management, beaver and other nuisance animal control, farm contract supervision, equipment maintenance, public user data collection, vegetation control, food plot planting, reforestation, and conducting managed hunts.

Recreational user days recorded on MAVS WMAs totaled 168,401 by hunters, fishers, campers, sightseers, bird-watchers and other public users.

White-tailed deer is the most popular game species hunted in the MAVS. Either-sex deer hunts were held on WMAs, with over 9,800 user-days recorded, with approximately 800 deer harvested on these hunts. In addition, bucks only, youth/handicapped, archery and muzzleloader hunts also took place, where an additional 675 deer were harvested. Turkey hunts were held on four WMAs, where 69 turkeys were harvested by an estimated 1,585 users. This includes 27 youth hunters who participated in the Sherburne, Spring Bayou and Grassy Lake youth lottery hunts. A member of NWTf or Region VI MAVS staff member served as a guide for each youth hunter to ensure a quality hunt and teach youth the techniques and safety of turkey hunting. Squirrel and rabbit hunting is also very popular on the region's bottomland hardwood WMAs, accounting for over 15,618 user days. Waterfowl hunting is very popular as well on MAVS WMAs in moist soil impoundments, greentree reservoirs, swamps and flooded bottoms. Waterfowl user days totaled over 8,200 for this period. Dove fields are maintained, along with many acres of food plots. Hogs have populated many of our WMAs and have become another hunting opportunity. Permits were issued to take hogs with the aid of dogs during a special late season on the WMAs. Over 75 permits were issued to individuals for this purpose.

Biologists and technicians maintain and monitor over 650 wood duck boxes, conduct pre-season wood duck banding, and collect samples for CWD, Avian Influenza and other disease testing. They also assisted with numerous nuisance animal complaints, illegally held deer and sick deer complaints. Biologists assisted LSU researchers with ongoing research projects.

Youth lottery deer and duck hunts were also held in MAVS, with great success on these hunts. Fourteen youth waterfowl lottery hunters harvested 50 ducks, for an average of 3.6 ducks per youth hunter. Seventy-eight youth deer lottery hunters harvested 14 deer, but many deer were observed and some harvest opportunities were missed. These hunts are held in refuge areas set aside for youth hunts, where these youth hunters have a quality hunt and learn about hunting in a safe environment. Wheelchair-bound waterfowl and deer hunts were held in MAVS with much participation and success from this group of hunters.

Alligator applications were reviewed, and licenses and tags were issued to about 75 WMA hunters. There were eight WMA alligator hunters who bid on tags on the WMAs, but only three of the eight WMAs had hunters participate in the season, mostly due to low prices for harvested alligators. These hunters were issued 139 tags, with all tags being filled. The average length of the alligators harvested was over 7 feet, with an average price of \$7.50 received for the alligators. In addition to these hunters, 66 lottery hunters were issued tags. This lottery hunt is done through an application process, with each hunter selected receiving three tags. This gives the public an opportunity to participate in the alligator harvest program.

Routine maintenance activities on MAVS areas included road grading, culvert replacement, spot road repairs, drainage improvements, beaver control, boundary work, sign replacement, self-clearing station maintenance, vegetation control, equipment maintenance, and facility upkeep. In addition, WMA personnel conducted user interviews and operated weigh stations. Wildlife food plots were also planted on several MAVS WMAs.

Efforts to improve the road system on Dewey Wills WMA continue. The storage shed was refurbished and the water system completely re-done on Red River WMA in fiscal year 2009-2010. Spot repairs on WMA roads were made as funding allowed.

MAVS WMA personnel participated in the MC252 (BP Deepwater Horizon) oil spill response effort.

FORESTRY PROGRAM

The mission of the Forest Management Program is to improve forest and wildlife habitat on WMAs through sound forest management, reforestation practices and forest/wildlife research activities.

Harvest preparations, including sale layout, inventory, regeneration counts, marking, Geographic Information Systems (GIS) map development, proposal preparations and sale amendments, were completed on Alexander State Forest, Big Lake, Dewey Wills, Grassy Lake, Marsh Bayou, Russell Sage, Spring Bayou and Three Rivers WMAs. Economic struggles in the forest industry contributed to low interest and prices for timber sales. Harvests to improve wildlife habitat were attempted and/or conducted on Alexander State Forest, Boeuf, Dewey

Wills, Grassy Lake, Red River, Russell Sage, Spring Bayou and Three Rivers WMAs.

Chemical treatments of invasive/non-native species, primarily Chinese tallow tree and cogon grass, continued on Lake Ramsey, Pearl River, Sandy Hollow and Sherburne WMAs. No beetle outbreaks were reported on Sicily Island or Little River WMAs this year. Beaver control activities continued with 127 beavers and 78 dams removed from Big Lake, Boeuf, Buckhorn and Dewey Wills WMAs. No forest loss was reported this year from beaver activity. Drought conditions brought forth difficult trapping conditions this year, resulting in the low trapping numbers. Beaver removed in fiscal year 2009-2010 was 47 percent lower than the previous three-year average of 238 beavers removed.

Monitoring the impacts of Hurricane Katrina on the forest resources of Pearl River WMA continued. This monitoring included research on woody/herbaceous response, arthropod response and bird response. Search efforts for the ivory-billed woodpecker continued on the area with aerial and ground searches initiated and completed. Monitoring efforts also continued on Sherburne WMA to document the impacts of Hurricanes Ike and Gustav.

Reforestation work continued on LDWF properties with concentration on Boeuf, Marsh Bayou, Ouachita and Red River WMAs. Site development and preparation, seedling and seed planting, survival plot establishment, and survival checks were all completed in fiscal year 2009-2010. Approximately 295 acres were reforested/afforested during the 2009-2010 planting season.

Acorn and other tree seed collections, along with purchase of quality seed, were conducted to ensure a seed and seedling source for future reforestation efforts. The annual WMA mast survey aids this effort by concentrating collection efforts where the most needed species are available. The mast survey also provides an indication of the future abundance of forest wildlife species such as squirrels.

GPS work on WMA trails, roads, lakes, compartments and area boundaries was accomplished to aid the WMA management program. GIS program development continued with emphasis on updating timber sale data, boundaries, roads and streams to complement WMA forest management and development activities.

Growth Monitoring Plots were read on Big Lake and Three Rivers WMAs. These permanent plots aid in monitoring habitat conditions and long-term effects of the forest management program on the habitat components represented on the WMAs.

An avian productivity and survival monitoring project continued on Sherburne WMA with seven stations and on Pearl River WMA with two stations. Forestry Section personnel provided support for this project, expected to continue for 10 years (this completed year seven). Results

from this study will aid in understanding of avian use of various silvicultural treatments applied across WMAs.

Forestry Section personnel continued to implement the Louisiana Statewide Red-cockaded Woodpecker (RCW) Safe Harbor Program (SHP) to benefit the federally and state endangered RCW. Eight new Safe Harbor Management Agreements were entered into with private landowners. With the addition of these lands, LDWF has entered into a total of 14 Safe Harbor Management Agreements, enrolling 431,620 acres in the RCW SHP with 100 baseline RCW family groups and two above baseline RCW family groups. LDWF personnel conducted annual site visits to 10 SHP properties to confirm compliance with the voluntary RCW management activities that each landowner agreed to implement on their property and to provide technical assistance regarding RCW management. Forestry Section personnel continue to promote SHP via press releases, presentations at public forums, and the LDWF website.

Forestry Section personnel also continued to implement the Louisiana Landowner Incentive Program which provides cost-share dollars for RCW management on SHP enrolled lands. Management activities eligible for funding include RCW artificial cavity installation and maintenance, prescribed burning, herbicide treatments to remove hardwood midstory in pine stands, mechanical removal of hardwood midstory in pine stands, and RCW demographic monitoring. Participating landowners provided a 25 percent match to the federal Landowner Incentive Program funds LDWF received from USFWS. Approximately \$140,000 of \$155,000 total federal dollars have been distributed to private landowners via professional service contracts. LDWF expects to have all Louisiana Landowner Incentive Program funds expended by October 2011.

Forestry Section personnel performed RCW demographic monitoring and management for 13 RCW family groups at Alexander State Forest WMA located in Woodworth. These activities include but are not limited to:

- annual activity status checks of over 200 RCW cavity trees.
- adult RCW capturing and color banding.
- RCW nest checks and nestling color banding.
- RCW fledgling checks to determine survivorship.
- RCW artificial cavity installation and maintenance.
- midstory control in 14 RCW cluster sites.
- providing technical assistance to Louisiana Department of Agriculture and Forestry staff regarding timber management to benefit the RCW.

In addition, Forestry Section personnel performed RCW demographic monitoring for one RCW family group at Southeast Louisiana Hospital located in Mandeville and provided training and technical assistance to USFWS staff performing RCW demographic monitoring for 17 RCW family groups at Big Branch Marsh NWR in Lacombe.

Other survey and research projects on the WMAs that were supported by Forestry Section staff involved wild-life use of forested habitats and their response to various silvicultural treatments. Continued research efforts, especially long-term, will be sought and cooperatively engaged in to learn more about the forest systems managed across the state. Continuing education for the Forestry Section staff occurred through participation at various workshops, seminars, research meetings and conferences throughout the year.

EDUCATION

Conservation education is a vital part of the LDWF mission. The Education Section within the Wildlife Division focused on three main areas:

- Hunter Education
- Aquatic Education
- General Wildlife Education

Staffing for the Education Program consists of 14 educators who work in the field, three supervisors, one administrative specialist, one education manager, and one education program manager. Three wildlife technicians staff LDWF-operated shooting ranges, and one maintenance repairer is responsible for maintenance of an education facility.

HUNTER EDUCATION

LDWF's Hunter Education Program provided training and certification in hunter education, bowhunter education and muzzleloader education, as well as assisting with other related educational programs.

Administration

Certification cards for hunter and bowhunter education students and instructor courses were provided to persons who successfully completed the necessary requirements. Hard copies were filed as well as stored electronically for all courses administered.

In August 2009, an on-line registration program was implemented, whereby users can register for a hunter education course solely on-line. Known as "Event Manager," this program contains a calendar which displays a schedule of hunter and bowhunter education courses being taught and allows the user to choose a course and then register for the class they choose. In the future, plans are to use this program to electronically enter course rosters directly into the hunter education data base.

Due to travel restrictions, no LDWF staff attended the International Hunter Education Association Convention in 2010, but did attend the Region 4 Hunter Education Administrators Meeting in Decatur, Ala.

Student Certification

Student certifications for hunter education were up from last fiscal year but down for bowhunter education. Requests for bowhunter education continue to decline as this requirement is no longer mandatory on federal refuges in Louisiana. Results are as follows:

Hunter Education			
Course Type	# Courses	# Students	Percentile
Classroom Course	464	16,123	85%
Alternative Study	110	2,900	15%
Total	574	19,023	100%
Bowhunter Education			
A total of 509 people for 31 courses were certified in bowhunter education in Louisiana.			

Instructor Training

A total of 198 new volunteer hunter education instructors were trained and provided with credentials to teach hunter education in the State of Louisiana through 17 instructor courses. In addition, two bowhunter education instructor courses resulted in 20 persons being certified to teach bowhunter education. One statewide workshop was planned and carried out at Camp Grant Walker in Pollock, La. with 86 instructors in attendance. This workshop is usually held in March, but due to budget shortfalls it was postponed until August to coincide with the start of a new fiscal year.

A review of the LDWF Louisiana Hunter Education Program was conducted July 27-31, 2009 in Baton Rouge, La. The USFWS's Multistate Conservation Grant Program provided the funding to the International Hunter Education Association to conduct the review. The purpose of the review was to determine if the highest quality of hunter education information and the most up-to-date teaching techniques are being used, as well as identify strengths, weaknesses, opportunities and threats within the Louisiana Hunter Education Program. The team utilized several evaluation methods including a review of federal assistance documents, budgetary information, organizational charts, procedures and policy manual, position descriptions, and a mail in survey. The team interviewed the Louisiana Hunter Education Program staff as well as Wildlife Division administrative staff and attended one hunter education course being taught during its visit. Overall the program received a favorable review and the volunteer instructors who teach in Louisiana were cited as being passionate and dedicated to their job. In as much as we are doing a good job overall with our program, some needs were pointed out. Recommendations made were noted and will be addressed towards improvement of the program. LDWF and the Hunter Education staff wishes to express a sincere thank you to our reviewers and all who took the time to provide comments that will be used to better our program. The review team consisted of the following individuals:

- Wayne East, *Executive Director*, International Hunter Education Association
- Ray Metzler, *Hunter Education Administrator*, Alabama Department of Conservation and Natural Resources
- Terry Erwin, *Hunter Education Administrator*, Texas Parks and Wildlife Department

- Wayne Waltz, USFWF Division of Federal Assistance, Region 4, Charleston, South Carolina
- Brie Barr, USFWS Division of Federal Assistance, Region 2, Albuquerque, New Mexico

In response to the peer review, an incentive program that awards volunteer instructors based upon years of service has been implemented. The initial awards were presented at the August workshop. Awards are given according to instructors in five-year increments.

Volunteers contributed 27,453 hours of in-kind service time for fiscal year 2009-2010.

Hunting Incidents

A total of nine hunting incidents were documented for fiscal year 2009-2010. All were Class A incidents and non-fatal. Results were compiled by type and category and entered into the National Hunter Education Incident Database and made available to volunteer instructors. Major factors for these incidents were as follows:

Hunting Incidents (Fiscal Year 2009-2010)	
Type	# Victims
Victim out of Sight of Shooter	3
Failure to Identify Target	1
Trigger Caught on Object	1
Loading Firearm	1
Careless Handling of Firearm	1
Failure to Check Beyond Target	2
Total Incidents	9

Shooting Range/Training Facilities

LDWF staffs and operates two education centers and four public shooting ranges.

Bodcau Shooting Range

Located in Bossier Parish on Bodcau WMA, upgrades to this facility were recently completed with monies and labor provided by the Bossier Parish Police Jury and Bossier Parish Sheriff's Office. The range expansion project has provided an increase in shooting opportunities to the public. More improvements are planned for fiscal year 2010-2011. Shooting accommodations consist of 12 shooting points for rifle and 10 for handgun. A shotgun shooting station with one clay target thrower and a 10-target archery range allows shooters to participate in recreational target shooting as well as sharpen their skills for hunting season. The range is open to the public three days a week and is staffed by one technician.

Woodworth Education Center

The Woodworth Education Center, located in Rapides Parish, contains both classroom and sleeping facilities and a public shooting range. In the spring of 2010, a complaint of an errant round fired from a rifle at the Woodworth range was reported to the manager at Woodworth. It was found that a bullet had struck a build-

ing at a State Forestry Headquarters located behind the range. An investigation followed, and as a result the range was shut down due to safety concerns. The range is now being reconstructed with the direction of its firing line being reoriented away from the State Forestry complex. The range opened on a limited basis in September 2010 and will include the addition of a handgun range. Volunteer help to operate the range is provided by the Bayou State Muzzleloaders Association as well as other volunteers from the local community

Sherburne Shooting Range

Located in Pointe Coupee Parish, the Sherburne range consists of one skeet field, one archery range, one handgun range and one rifle range. It is operated by one technician and is available to the public seven days per week. In 2008, the Sherburne range facility suffered damage from Hurricane Gustav. The roof and frame on both of the rifle and handgun ranges had to be repaired. The pavilion on shotgun range #2 was completely demolished. It has since been rebuilt, and plans are being made to completely rebuild the overheads on both the rifle and handgun range with metal in order to have a stronger platform to face storms. The skeet field high and low houses on shotgun range #1 were completely demolished due to their poor condition and safety hazard. Manual throwers have been installed in their place to provide some shooting opportunity.

Waddill Outdoor Refuge

The Waddill Outdoor Refuge in East Baton Rouge Parish provides a needed outdoor education environment in an urban setting. A classroom, solar power shotgun range and outdoor setting provide an ideal opportunity to teach hunter education. The refuge is staffed by one manager and one technician. An air rifle range is planned in order to encourage youth participation in rifle shooting sports.

Honey Island Shooting Range

The Honey Island Shooting range, located on Pearl River WMA in St. Tammany Parish, is managed under an MOU agreement by the Southeast Louisiana Firearms Safety, Inc. This group of volunteers is a non-profit organization that completely handles all aspects of operating the range for public use. Shotgun, rifle and handgun shooting opportunities are available to the public. Solar power is in the process of being installed at the range to provide electrical service. All expenses are being covered by range fees collected by the Southeast Louisiana Firearms Safety, Inc. The range is open to the public three days per week. Some of the members also serve as hunter education instructors and offer year-round field day courses at the range.

Volunteer hours accrued from the Woodworth and Pearl River Ranges totaled 5,555.

AQUATIC EDUCATION

The Education Section of LDWF introduces people to the sport of fishing and promotes awareness of the aquatic resources in the state through both public programs and teacher training.

Administration

Volunteer hours from field activities were documented and stored electronically, as well as hard copies filed. Standard equipment such as fishing tackle to be used for fishing programs were purchased as needed. In addition, aquatic staff participated in the following conferences:

- Southern Association of Marine Educators.
- American Fisheries Society Conference.
- LUMCON's H₂O Water Quality Teacher Workshop (mentor).
- Gulf of Mexico Diversity (Underserved/Underprivileged) Symposium.
- Louisiana Science Teachers Association.
- Environmental Education Symposium.

Curriculum & Training

Clinics

Aquatic education clinics were held statewide that resulted in 6,955 volunteer hours generated. Subjects covered in aquatic education clinics include outdoor ethics, fish identification, tackle selection and fishing techniques. Participants also are involved in actual fishing activities.

Publications

Three publications were distributed to teachers in the school system for classroom use:

- "Fishing For Fun" - 6,095 distributed
- "Let's Go Fishing" - 9,198 distributed
- "Finnie The Fingerling" - 4,932 distributed

These publications promote an appreciation of aquatic resources and their habitat.

Workshops

Teacher workshops were conducted to provide training in aquatic education that can be brought back to the classroom. The following workshops were conducted:

Project Wild (Aquatic)

The Project WILD coordinator position was moved into the Environmental Education Division. The individual who had taken this position has since moved on to another job and this position is now vacant. No workshops are being taught at this time.

Wetland Education for Teachers (WETSHOP)

WETSHOP was canceled due to the Deepwater Horizon Oil Spill. The lab facility located on Grand Isle, La. was used for oil spill work and the island itself was heavily impacted by oil.

Coastal Wetland Workshops

Coastal Wetlands Workshops were held to train teachers on the subject of wetlands ecology in coastal habitats. *Wonder of Wetlands* manuals, as well as other resources, were issued to enable teachers to bring this knowledge back into the classroom. A total of five workshops were held statewide which resulted in 100 teachers being trained.

Hatchery Education

Educational programs were held at the Booker Fowler Fish Hatchery to demonstrate the techniques used to raise fish in an artificial environment. Tours of the hatchery were conducted for school students and the general public. Educational materials and special presentations were made available through the visitor center. There were approximately 330 students educated through the hatchery aquatic education program during fiscal year 2009-2010.

Native Fish in the Classroom (NFC)

A multidisciplinary, classroom-based aquaculture stewardship project for intermediate to high school students. The overall goal of the NFC project is to assist students in developing an attitude of stewardship toward natural resources and to create a constructive, active learning situation in which they can explore strategies for sustaining aquatic ecosystems. Students obtain hands-on, real-science knowledge of the state's native aquatic resources.

During the 2009-2010 school year, 18 Louisiana teachers participated in the NFC project which impacted approximately 2,500 students. Teachers attend several workshops and meetings to ensure successful preparation for receiving paddlefish eggs in the spring. Teachers participated in the spring paddlefish spawn where they receive paddlefish eggs. Louisiana paddlefish were raised from eggs to fingerlings which were then returned to the LDWF Booker Fowler Fish Hatchery. Schools bring students on a field trip to the hatchery to return their classroom-raised fish. The hatchery then returned the fish to the wild.

"Finnie the Fingerling"

This workbook was developed to provide guidance on the inner workings of how the day to day operations of a fish hatchery are conducted. Readers are taken on a guided tour by "Finnie the Fingerling" of the Booker Fowler Fish Hatchery. Information is provided on how fish are spawned and released into the wild.

GENERAL WILDLIFE EDUCATION

National Hunting & Fishing Day

The general public is shown appreciation of its support by being invited to join LDWF in an open house atmosphere that involves hands-on activities and a closer look at department-sponsored programs and activities. The Hunter Education Section provided training for the public in the safe use of shooting equipment. Four LDWF-sponsored events were held at the following locations:

- Bodcau Shooting Range
- Monroe office facility
- Woodworth Education Center
- Waddill Outdoor Refuge

A total of 6,850 participants attended.

Becoming an Outdoors Woman (BOW)

BOW continues to be a popular program with women interested in learning about outdoor recreation. Education staff and volunteers conducted activities which taught outdoor skills including shooting, fishing, canoeing and

wildlife appreciation. One statewide event was conducted with 132 participants in attendance.

Families Understanding Nature (FUN) Camp

FUN Camp provides both fun and education to a parent and youth through a weekend of staff-lead outdoor activities. Family members are introduced to the safe use of firearms and other recreational shooting equipment. The education staff participated in two FUN Camps for fiscal year 2009-2010.

National Archery in the Schools Program (NASP)

The Louisiana state NASP tournament was held February 2010 at C.E. Byrd High School in Shreveport, La., where 131 shooters were in attendance. Currently 98 schools are conducting NASP training as a part of their curriculum. In July 2009, the LDWF Shooting Sports coordinator, Cliff Dailey, attended the 2009 NASP Conference in Flipp'n, Ark. Much knowledge and information was gained on coordinating a NASP program.

Non-governmental Organization Activities

The education staff supports and participates in activities sponsored by non-governmental organizations such as DU, NWTF and the Quality Deer Management Association which provide opportunities to educate the public about wildlife conservation and hunting safety.

COASTAL & NONGAME RESOURCES

ROCKEFELLER WILDLIFE REFUGE

Rockefeller Wildlife Refuge (RWR), located in coastal Cameron and Vermilion parishes, was created in 1920 through a land donation developed by E.A. McIlhenny. He later persuaded the Rockefeller Foundation to deed the area to Louisiana, with the original intention of providing a sanctuary/preserve for waterfowl. The refuge also serves as a research site for marsh management strategies (i.e., limiting saline encroachment, reversing marsh deterioration, and providing productive wildlife habitat), while also serving as a research site for fisheries/wildlife research by RWR staff and other governmental/academic agencies. RWR staff provide professional expertise for the implementation of international, federal, and state legislation/regulations governing wise use of alligators, coastal wetlands, and other important wildlife/fisheries resources. Further, management expertise and guidance is provided by RWR staff to local landowners of marshland. Lastly, RWR serves as a recreational outlet for the local populace, as well as a destination for regional tourists.

Active multiple use marsh management is the primary goal at RWR: to provide quality wintering habitat for waterfowl species, while secondarily providing habitat for shorebirds, wading birds and estuarine organisms (i.e., fish, shrimp and crabs). The goal of research activity on RWR is to disseminate findings to local, state, national and international audiences. Since 1955, RWR staff has contributed over 500 professional publications, reports and professional conference abstracts to a wide array of audiences. The goal of public outreach with local landowners and/or state, federal and international groups on legislation/regulation is to encourage best conservation/management practices for fish and wildlife, as well as their habitats. RWR strives to provide a popular destination for recreational/tourist activity, primarily through the abundance of the fisheries resource (i.e., fishing, shrimping, crabbing) and the diversity of watchable wildlife (i.e., birdwatchers); it should be noted recreational/tourist activity should not supersede any of the other previously mentioned RWR goals.

POST HURRICANE CONSTRUCTION/REPAIRS

RWR maintenance personnel continued post-hurricane repairs during 2009-2010, including the construction of two bridges on the Unit 2 Levee during the fall of 2009

(FEMA PW- \$105,114.00). These repairs provided vehicular passage around the 6.5 mile management unit.

During fiscal year 2009-2010, reconstruction began on the boathouse, equipment building and lumber shed that were destroyed by Hurricane Rita and significantly damaged again by Hurricane Ike in 2008. An architect was also selected for the reconstruction of the shop. Also, a survey/bid-package contract was completed in December 2009 to survey over 50 miles of levees that were excessively damaged in 2005 by Hurricane Rita, from the East End Locks to Rollover Bayou. Completed during fiscal year 2009-2010, it documented an estimated 5.2 million yards of material that will be needed to restore the levee system.

The Capital Outlay Project for reconstruction of the East Boat Launch began in 2009-2010. Lonnie Harper and Associates was selected by the Engineer Selection Board of Department of Administration to develop the bid package for the \$2.88 million project (projected summer of 2011).

Resident biologist housing at RWR became unsafe due to Hurricane Rita. Families were moved to LDWF-owned camper trailers, and efforts began to locate FEMA mobile homes. Three mobile home units in very good condition were moved to the refuge, permits obtained, and a bid package was prepared to elevate the buildings. It was expected that the buildings could be complete by August 2010 for occupancy. Reconstruction of the residences was delayed due to a FEMA policy restricting reconstruction in VE-Zones. This was amended June 2, 2009 allowing reconstructing in VE-Zones if damage was between 50 to 90 percent replacement cost. LDWF immediately began plans to reconstruct the residences (as well as the laboratory and alligator grow out facility). Both the residences and the lab were originally approved by FEMA for reconstruction on the original footprint. However, because of code driven elevation requirements, considerable improvements were needed to the laboratory (including a \$1 million ramp and elevator); this was deemed impractical, and it was decided to reconstruct the lab on a nearby elevated site. After much discussion with the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA, it was approved along with including consolidation of five facilities at that

site (laboratory, storage shed, boat shed, alligator incubator shed and chemical shed). Negotiations continued during the 2009-2010 fiscal year on relocating the residences slightly off the original footprint.

A RWR Programmatic Review was conducted by USFWS during October 2009. This is compliance with the 1919 RWR Foundation Deed of Donation as modified in the 1944 and 1988 Memorandum of Agreement between the service and LDWF. They reported LDWF was doing an exemplary job of managing the land base, and they were favorably impressed with the habitat. They were concerned that more post hurricane repairs had not been made stating, "regardless of potential FEMA funding, the department should consider using trust money and reimburse the trust when FEMA monies are received."

OIL SPILL RESPONSE

Immediately following the Deepwater Horizon drilling rig explosion on April 20, 2010, RWR staff began creating maps with GPS coordinates of tidal drainages and estimates of boom-line needed to protect sensitive areas on the refuge. Weekly shoreline and offshore surveys were conducted to locate oil and/or oiled wildlife; staff used ATVs, boats, airboats and airplanes to complete surveys. Staff also attended frequent meetings with officials from British Petroleum (BP), U.S. Coast Guard (USCG), USFWS, Louisiana National Guard, the Office of Homeland Security, as well as state and parish officials. Refuge staff used their knowledge of the area to help BP and USCG officials create monitoring plans from Marsh Island to the TX/LA state line, as well as taking both groups on multiple surveys of the refuge and surrounding areas. RWR served as a staging area during the spill for USCG and environmental contractors working for BP. The lumber shed was used to house tens of thousands of feet of boom-line, anchors, floats and other oil response supplies. The refuge also stored many boats and ATV vehicles for groups involved with the oil spill response. Many individuals with state, federal and/or universities have visited the refuge to investigate and study the impacts of the spill on southwest Louisiana, or to use the refuge as a control site to other impacted areas to the east.



Oil spill reconnaissance along Rutherford Beach (Cameron Parish) with US Coast Guard and BP officials.

MARSH MANAGEMENT, RESTORATION, HABITAT ENHANCEMENT & MINERAL MANAGEMENT

Marsh Management

RWR staff maintains over 200 miles of levees and 40 water control structures for the conservation of approximately 76,000 refuge wetland acres and 100,000 private sector acres within the Mermentau River Basin. Objectives of maintenance and manipulation of the refuge's system of levees and water control structures vary somewhat by management unit, but general goals are to maintain marsh health, provide conditions favorable for production of waterfowl food plants, and incorporate multi-species management when possible. Emergency actions to reduce flooding, stop salt water intrusion, and restore hydrology continued as a result of damage sustained from Hurricane Rita in 2005 and Hurricane Ike in 2008. Maintenance personnel continued cleaning ditches and repairing levees in Units 6, 14 and 15 which encompass 16,800 wetland acres.

RWR staff conducted the eighth year of vegetative transects on the refuge. These transects act as a long-term, quantitative assessment of marsh management strategies on the refuge by monitoring plant species composition within management units. This survey across the refuge consists of over 1,500 sample plots, where species presence and stem density is recorded. Any changes that are discovered in vegetative composition will be used for future management decisions. In mid 2010, discussions began between refuge staff and U.S. Geological Survey (USGS) GIS specialists to incorporate modern technology (i.e., remote sensing data) into the vegetative survey; these tools may be utilized during fiscal year 2010-2011.

Marsh fires during the right time of the year have been shown to decrease fuel loads of marsh vegetation, prevent unwanted lightning fires during the spring/summer, and also provide new stem growth for migratory waterfowl species, especially geese. Generally, one-third of the refuge is burned on a yearly basis. During fiscal year 2009-2010, approximately 16,800 acres were burned in Units 3, 5 and 6, and Price Lake Unit.



Installation of an experimental reef breakwater section along the Rockefeller shoreline in an effort to limit shoreline erosion.

Restoration and Habitat Enhancement

LWDF entered into an agreement with USACE and other regulatory agencies to construct the Rockefeller Mitigation Bank to offset wetland losses caused by adverse impacts which occur following activities in Louisiana's Coastal Zone. The major objective of LWDF in establishing the Mitigation Bank is to compensate for impacts occurring on RWR. However, it still may be considered as compensation for impacts outside the refuge provided there are no available approved mitigation projects.

LWDF originally permitted three areas on RWR as potential wetland mitigation sites in 2000 (totaling 1140.7 acres). Actual work began on the first site (4.7 acres) in 2007. Dredging was completed January 2008, and four months later it was surveyed. The final as-built-survey of the site was completed Feb. 24, 2010, in compliance with requirements with our MOA. On May 27, 2010, 1,350 *Spartina patens* plugs and 2,030 *Spartina alterniflora* plugs were planted. In June 2009, a contract was negotiated with HDR Engineering for the third salt marsh site (66 acres). The contract agreed to make surveys, develop specifications/drawings, bid/monitor the project, conduct regular meetings, and determine payment to the dredging contractor. They had 180 days to prepare the construction documents. Geotechnical work was completed in August 2009, and the scope of work prepared, ready for bid in March 2010. Bid problems were encountered, and the \$2 million dollar project was scheduled to be rebid in August 2010.

RWR was fortunate to be selected for a Coastal Impact Assistance Program (CIAP) project to evaluate different test scenarios for shoreline stabilization. Presently the refuge is losing over 100 acres annually to beach erosion; this rate is six times more than other areas of shoreline extending from Vermillion Bay to the Texas state line. Sponsored by LDNR, the \$9.3 million project began in June 2009 with construction of a low profile reef breakwater section. This was followed by placement of a section of beach fill constructed of crushed stone, and the last test was a rock reef breakwater placed on a light-weight aggregate core.

ORA Technologies, LLC also initiated a project on RWR in June 2007 to evaluate stabilization of canal banks with specially designed structures that promote the creation of artificial oyster reefs. In 2009 a graduate student began evaluating slightly different designs and measuring growth and material deposition. A version of this technology is planned to be tested for Gulf of Mexico shoreline stabilization.

The Bio-Engineered Oyster Reef Demonstration Project LA08 is sponsored by LDNR. Plans have been developed, permits obtained and funding requested for this project. The objective is to evaluate an oyster break system's capacity to reduce and/or prevent shoreline retreat and wetland loss. The system is patented technology with oystercrete units composed of nutrients/texture that oyster's require and will be constructed 2.5 miles west of



LSU collaborative project with Rockefeller Wildlife Refuge to construct artificial oyster reefs for bank/shoreline stabilization.

Joseph Harbor Bayou. Expected bid date could be as early as February 2011.

Biologists continued cooperating with USFWS on their South Grand Chenier Hydrologic Restoration Project, Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) (ME-20). This included field traps, meetings and review of dredge pipeline placement plans.

Mineral Management

During fiscal year 2009-2010, the Aug. 12, 2009 mineral lease sale for RWR resulted in one tract awarded to Hillcorp Energy for \$350/acre and resulted in \$260,400 plus 25 percent royalty placed in the Rockefeller Trust. The May 12, 2010 mineral lease sale advertised six tracts. Two received bids by Walter Oil and Gas, and leases were awarded. Revenue generated for the Rockefeller Trust was \$362,935.20. This resulted in nine active leases. There were five plug and abandon projects permitted during this period for Exxon Mobil.

WATERFOWL PROGRAM

RWR and New Iberia biological staff conducted three coastal waterfowl surveys at RWR, State Wildlife Refuge, Marsh Island Refuge, White Lake Wetlands Conservation Area (WCA), Atchafalaya Delta WMA, Point-aux-Chenes WMA, Salvador WMA and Pass-a-Loutre WMA. These data are a continuation of long-term data on wintering waterfowl abundance.

RWR and New Iberia staff conducted the visibility correction portion of the third annual Mottled Duck Breeding Bird Survey. This survey is a cooperative effort of the Gulf Coast Joint Venture, USFWS, Texas Parks and Wildlife Department, LWDF and LSU. It involves flying fixed-wing aircraft over 27 coastal transects and then "beating out" selected segments with a zig-zagging helicopter, and traversing similarly selected segments with an airboat to develop a visibility correction factor to adjust estimates from the fixed-wing. The survey is conducted over four days with a one-day offset between fixed-wing and helicopter/airboat. RWR staff also conducted the airboat portion of the survey.



Blue-winged teal are the first migratory waterfowl species to arrive in the fall (photo by Ruth Elsey).

In 1994, RWR began a long-term mottled duck banding program to monitor annual survival rates and analyze distribution along the Gulf Coast between Texas and Louisiana. The banding effort is now a cooperative endeavor with Texas and Louisiana and involves many state and federal biologists, technicians and student workers. Some of the early analysis of data has shown high variability in survival rates with little mortality being attributed to hunting. Coastal and Nongame Resources Division biologists completed the 16th year of this program by banding 1,300 mottled ducks statewide in 2009; since the project inception in 1994, 35,484 mottled ducks have been banded.

ALLIGATOR REMOVAL & FUR TRAPPING

An abbreviated nuisance alligator harvest occurred on RWR in September 2009. Alligator industry buyers showed little interest in purchasing hides due to low demand on the world market. Hunting was optional for the nine Rockefeller alligator hunters, including one hunter who harvested 80 alligators from the East End locks area. Harvesting of alligators in this high public use area reduced the chance of negative interaction between alligators and humans. The average length of each alligator was 6.52 feet with a \$4.74 average price per foot.

Fur trapping did not occur on RWR during fiscal year 2009-2010 due to the low numbers of furbearers present on the refuge after Hurricane Rita in 2005 and Hurricane Ike in 2008.

NON-GAME WILDLIFE PROGRAM

LDWF discontinued yearly helicopter bald eagle nest surveys after the bald eagle was removed from the endangered species list, but partnered with USFWS to develop a fixed wing aerial survey. The first survey was conducted in 2009-2010 and will be conducted every three to five years.



Brown pelican in West Cove of Calcasieu Lake, near the Rabbit Island nesting colony.

Brown pelicans were common residents of coastal Louisiana, but nesting ceased in 1961 and they disappeared from the state in 1963 due to the use of pesticides. From 1968 to 1980, 1,276 young pelicans were reintroduced to Louisiana from Florida at three release sites. Since then, over 375,000 brown pelicans have been produced in Louisiana since 1971. This tremendous recovery spurred the brown pelican to be removed from the endangered species list on Dec. 17, 2009.

The Deepwater Horizon Oil Spill occurred off the southeastern Louisiana coast on April 20, 2010. There was grave concern that the oil spill was going to impact Louisiana brown pelican nesting colonies. Aerial helicopter surveys were completed on April 29, 2010, with approximately 10,114 nesting pairs incubating eggs. LDWF personnel developed a plan to minimize the negative effects of the spill if oil came ashore.

RWR staff continued investigating the suitability of White Lake WCA for the proposed re-introduction of whooping cranes (*Grus americana*) in collaboration with Sammy King and LSU. The focus of this study has been to evaluate whooping crane foraging potential on the property's 70,965 acres of fresh marsh. In addition, RWR staff hosted the Whooping Crane Recovery Team in April

2010. The primary goal of this meeting was to allow the recovery team an opportunity to view the vast Louisiana marshes and to allow face-to-face discussions regarding the progression of the proposed reintroduction. LDWF staff was successful in their efforts and the recovery team recommended proceeding forward with the proposed reintroduction.

RECREATIONAL USE

Marsh management units continue to be very popular with sports fisherman, resulting in overcrowding in many places on the refuge. Damages to levees and alterations of automatic features of structures that regulate water salinities and levels due to Hurricane Ike continue to be a problem. Continued heavy public usage on the East End/ Joseph Harbor boat launch continue to degrade both the launch and parking facilities, with improvements needed in the very near future. According to data collected in 2009-2010, it was estimated that RWR experienced approximately 86,925 man-days of public use*, with 84,275 considered for consumptive use and about 2,650 for non-consumptive activities.

**Due to equipment malfunction, no data was taken during fiscal year 2009-2010 for Price Lake Rd., a very high public use area during the summer months and especially shrimp season.*

ESTUARINE FISHERIES PROGRAM

RWR staff's ability to manage estuarine organisms continues to be severely limited due to the destruction to levees/ water control structures caused by Hurricanes Rita and Ike; this will continue until repairs are completed and units are functioning as planned. Though the primary goal is habitat management/restoration, personnel are able to strategically allow ingress and egress of organisms into the Superior Canal complex and several other management units when habitat integrity will not be compromised. RWR continued its fisheries monitoring program in conjunction with various habitat management/restoration strategies. This sampling is in connection with the long-term program to identify and document effects of structur-

al marsh management on marine organisms. Staff also continued efforts in stocking Florida-strain largemouth bass (*Micropterus salmoides v. floridanus*) to supplement populations on the refuge lost due to extreme drought conditions, as well as improve recreational fishing in the area where freshwater habitat is available. Approximately 91,360 fingerlings were released in May 2010 into the Superior Canal system. An estimated 5,000 fingerling were kept in the ponds for grow out to reach Phase II stage (4-6 inches in length). These advance-stage fish will be used to create an enhanced public fishing/educational opportunity to be constructed in early spring 2011.

TECHNICAL ASSISTANCE, OUTREACH & EDUCATION

Refuge personnel continued its outreach program, hosting several events to educate elementary, high school and college students in wildlife, marsh ecology and coastal erosion. Students were housed from various institutions including Tulane, Texas Tech University, UCLA, LSU, University of Arkansas, Minden High School Nature Club, Vernon Parish 4-H and the Ulster Group (a group of Irish-American exchange students).

One of the largest groups the refuge hosts each summer is the 4-H Marsh Maneuvers Camp. In 2009, 66 students from 18 Louisiana parishes participated in this month-long camp which is designed to educate high school students of the importance of coastal marsh erosion, restoration, conservation and ecology.

In Oct. 2009, staff assisted the Coalition to Restore Coastal Louisiana and around 100 Coastal Roots Kids in planting around 1500 plugs of smooth cordgrass (*Spartina alterniflora*) along Rollover Bayou. Staff also participated during May 2010 in another marsh grass planting with the American Wetland Conservation Corps along Rollover Canal and Price Lake Rd.



Refuge staff seining fish ponds in order to stock bass across Rockefeller Wildlife Refuge.



Biologist Carrie Salyers conducting education/outreach to school-age children.

Other technical assistance provided by Rockefeller staff include:

- assisted the Louisiana Natural Heritage Program (LNHP) during annual winter plover surveys.
- two staff members guided at the annual Bald Eagle Expo held in Morgan City, La. Over 100 guests participated in the program, February 2010.
- RWR hosted the annual meeting of the Associations of Fish and Wildlife Agencies U.S. Furbearer Conservation Technical Working Group.
- RWR hosted an airboat operators training and certification course May 3-6, 2010. The three-day course went through all aspects of airboat operation including the mechanics, trailer and boat specifics, safety precautions, and also several field exercises; approximately 20 individuals took the class. The General Quarters dormitory served as housing for the class.

RESEARCH & PUBLICATIONS

A unique attribute of RWR is the emphasis on wildlife, fisheries and marsh management research. A list of publications by RWR staff and other division personnel conducted entirely or partially on the refuge is currently being updated and is available by request; the papers from this list are also being electronically scanned for public use as an online-access, documental retrieval resource. This is tentatively scheduled to be completed during 2011.

With the recent addition of three new staff biologists at RWR, it is likely that new research avenues will be explored since each biologist comes with a unique research background (i.e., reptiles/amphibians, non-game fish and/or non-game small mammals); fortunately, many of these areas have not been previously explored by RWR biologists. Future projects may include surveys for rare wading-shorebirds, studies on neotropical migrants and stopover ecology on chenier sites, herpetofaunal inventory of RWR, and status surveys for diamondback terrapins (*Malaclemys terrapin*), rare non-game fish species, and bats/non-game mammal species. In summation, RWR staff will continue to balance individual research projects and cooperative research projects with other agencies and/or academic institutions.

During fiscal year 2009-2010, cooperative studies conducted on RWR included:

- Polycross seed of genetically diverse smooth cordgrass (*Spartina alterniflora*) for erosion control and habitat restoration. Herry Utomo, LSU.
- Population ecology of larval blue crabs. Erin Grey, Tulane.
- Evaluation of storm deposits in Chenier Plain lakes specifically looking for deltaic overwash fans collected in sediment cores. Alexander Kolker, LUMCON.
- Collection of undersize red drum for a research project on fish physiology. Austin Humphries, LSU.
- Collection of Phragmites rhizomes and soil samples on the refuge to compare greenhouse growth rates of different haplotypes at varying water depths and salinities. Ted Turluck, ULL.
- Ongoing research studying hybridization between King and Clapper rails. James Maley, LSU.
- Ongoing fish research comparing pre and post-Hurricane Ike sampling data. John Gordon, LSU.
- Monitoring mortality rates of adult rails with sub-lethal levels of visible oiling using radio telemetry. John Schmerfeld, USFWS & Marie Perkins, Biodiversity Research Institute.

Publications by RWR Staff Biologists

Perkins, M., S.L. King, S.E. Travis, and J. Linscombe. 2009. Use of morphometric measurements to differentiate between species and sex of king and clapper rails. *Waterbirds* 32:579-584.

Ennen, J. R., J.E. Lovich, B.R. Kreiser, W. Selman, and C.P. Qualls. 2010. Genetic and morphological variation between populations of the Pascagoula map turtle (*Graptemys gibbonsi*) in the Pearl and Pascagoula rivers with description of a new species. *Chelonian Conservation and Biology* 9: 98-113.

WHITE LAKE WETLANDS CONSERVATION AREA

The White Lake Property (as referred to in Act 613, 2004 Louisiana Legislature) or White Lake WCA (White Lake - as referred to by the LDWF) is located in Vermilion Parish. The contiguous unit is 70,965 acres, located along the western boundary of Vermilion Parish; it is bounded on the south by White Lake, the northern boundary is 7.4 miles south of Gueydan at the south end of Hwy. 91. Lafayette is 32 air miles northeast, and Lake Charles is 40 air miles northwest. The southern boundary of White Lake is 17.5 miles north of the Gulf of Mexico. The property averages 12 miles from east to west and nine miles from north to south.

HISTORY OF OWNERSHIP

BP America Production White Lake properties have a long history of company ownership and management. Note that Stanolind Oil and Gas Company (Stanolind) preceded Amoco Production Company (Amoco) which preceded BP America Production Company (BP). Stanolind acquired the 70,965-acre property from Wright Morrow by Act of Sale on July 31, 1935. This sale

included all of the property acquired by Yount-Lee Oil Company from P. L. Lawrence, et. ux., by Act of Sale dated March 7, 1931 and a portion of the property acquired by M. F. Yount from Elizabeth M. Watkins by Act of Sale dated Nov. 5, 1929. BP owned and managed BP White Lake until July 8, 2002 when BP donated the property to the state of Louisiana. On July 8, 2002, a Cooperative Endeavor agreement between the state and White Lake Preservation Inc., a 501(c) 3 corporation, for management of the property was executed. On Jan. 1, 2005, Act 613 of the 2004 Regular Legislative Session became effective. This act established:

1. Transfer of property management from White Lake Preservation Inc. to LDWF.
2. The White Lake Property Advisory Board, LDWF, and the Wildlife and Fisheries Commission powers and duties relative to the management of the White Lake Property.
3. A special account within the Conservation Fund for the White Lake Property. On Dec. 17, 2004, the State, BP and White Lake Preservation Inc. signed a Transition Agreement for the management of the property by White Lake Preservation Inc. until July 1, 2005, at which time LDWF took total control.

SURFACE LEASES

Agricultural

There are currently 18,425 acres of property leased to five agricultural tenants for the purpose of farming rice, raising cattle and crawfish farming. There is a rice base totaling 4670.3 acres on this agricultural property. As a result of Hurricane Rita, our tenant farmers are still trying to recover from the effects the salt-water storm surge had on the property and their financial situations. In the fall of 2008, southwest Louisiana was hit by yet another hurricane. This storm, Hurricane Ike, flooded the Mermentau Fresh-Water Basin with salt-water. White Lake is located in the center of this basin, and as a result no rice was planted on the property in 2009 because of salt-water concerns. In the spring of 2010 we experienced drought conditions, which caused saltwater levels to rise once again in the Mermentau Basin. As a result there was only 600 acres of rice planted in 2010. The primary source of water for our farmers to flood their crops comes from this basin, most notably the GIWW. Because of the concerns over having and maintaining adequate fresh water, there was no crawfish production on the property for the 2009-2010 crawfish season.

There are over 100 miles of levees, canals and roads on the White Lake agricultural lands that are maintained by our agricultural tenants. They also own and operate the pumping systems that are needed to manage water levels on this impounded agricultural land. All of the farmland on White Lake was at one time fresh-water marsh that was impounded in the late 1940s when agricultural activities first began on the property.

Hunting

There were a total of 12 waterfowl hunting leases on the agricultural properties. The lease acreage totals 15,185 acres. There is also one waterfowl-hunting lease on the

marsh area located east of the Florence Canal. This lease contains 17,150 acres.

Trapping

There were a total of 479 Alligator Tags issued for the 2009 Alligator Trapping Season. Because of the unusually low market prices, we allowed our trappers to make the decision whether to trap or not. Four of six trappers did trap and harvested a total of 361 alligators. The average size of the alligators trapped was 6.18 feet with an average live length value of \$4.09 per foot.

As a result of poor market conditions there were no alligator farmers willing to collect and purchase alligator eggs from the White Lake property in 2009.

Fur trapping did not occur on White Lake during this year due to the continued low numbers of fur-bearers on the property. There has been no fur trapping on this property for over 30 years because of the low numbers of fur-bearers.

Other Surface Leases

There were two campsite leases, three oil and gas valve site leases, and three oil and gas drill site leases on the property in fiscal year 2009-2010.

LOTTERY ACTIVITIES

Fishing Lottery

2009

One-hundred fishing permits issued at a cost of \$30 per permit. Permittees and their guest were allowed to fish the Florence Canal Area and specified well location canals that flow into the Florence Canal. Area was open from sunrise to sunset from March 14, 2009 to July 31, 2009.

2010

One-hundred fishing permits issued at a cost of \$40 per permit. Permittees and their guest were allowed to fish the Florence Canal Area and specified well location canals that flow into the Florence Canal. Area was open from sunrise to sunset from March 15, 2010 to Aug. 15, 2010.

Waterfowl Lottery

Waterfowl Hunting		
	Total Hunts	Participants
Teal Lottery Hunts (4 teal hunts cancelled because of Hurricane Ike)	9	106
Marsh Lottery Hunts	10	114
Youth Hunts	2	16
Rice Field Lottery Hunts	23	195
Group Hunts	15	155

Waterfowl Hunting Results (2009-2010 season)		
	Marsh	Rice Field
Total Ducks Harvested	3,219	498
Average Kill/Hunter (ducks)	4.61	2.55
Total Geese Harvested	76	64
Average Kill/Hunter (geese)	0.11	0.32

NON-CONSUMPTIVE ACTIVITIES

LDWF established dates for the use of White Lake facilities, located within the WCA in Vermilion Parish, for non-consumptive group activities including nature photography, bird watching, educational field trips and business retreats. There were a total of nine day-trips and eight overnight trips made available for public booking during fiscal year 2009-2010. During this period there was one day-trip scheduled and hosted by White Lake for a group of 15 nature photographers/bird watchers in April 2010.

Birding Trail

In the spring of 2009 work began on the White Lake Birding Trail that will hopefully be completed in 2011. Approximately 20 acres of property located in the center and on the northern end of White Lake was selected as an ideal location that would be easily accessible to the public for bird watching activities. The trail has been laid out and dirt work started to facilitate public access. A parking area and access bridges have been completed. The next step is to build a welcome center, a birding tower and several other observation/sitting areas.

EDUCATION, OUTREACH & RESEARCH

Marsh Maneuvers

During December 2009 White Lake was host to a group of 16 high-school 4H students for three days. The three-day camp was designed to educate the students on the importance of coastal erosion, restoration, conservation and ecology. They were also able to go on a simulated waterfowl hunt and were taught waterfowl identification techniques. They participated in a sporting clay shoot where they were instructed on gun safety and the proper use of a shotgun.

Coastal Prairie

The is approximately 200 acres of Coastal Prairie on the White Lake property located south of the GIWW and west of the Florence Canal. For the past couple of years the LDWF LNHP has been doing research on the different plant species located on this prairie. Several trips are made annually to examine and collect plant species. Most of these plants will be deposited at the LSU Herbarium. To date approximately 95 different species have been identified. Larry Allain of the Wetlands Center will be the lead author on a publication that will report on the flora and vegetation.

Coastal Marsh King Rail Project

In the spring of 2010, White Lake worked closely with LSU grad students on research they are conducting on the king rail. The students had 18 survey points located on the White Lake property. In March they performed extensive water depth and salinity surveys at each location. In May they conducted three vegetation surveys within 50 m of each bird survey point. These surveys measured plant species composition (%) within 10 m of a point, % open water within 10 m, and vegetation structure measurements.

Preliminary results show king rails are primarily selecting shallow water depths (5-15 cm), while other birds, such

as the least bittern and purple gallinule, are using deeper water depths.

Whooping Crane Study

Historically, whooping cranes were residents of Louisiana. Prior to the 1800s observers reported large numbers of whooping cranes in Louisiana wet prairies and coastal locations. Sadly whooping crane numbers declined. Changing land use practices and unregulated hunting contributed to these declines. By 1945, only two cranes remained at what is currently known as the White Lake WCA. In March 1950, the lone Louisiana crane referred to as "Mac" was captured at White Lake and transported to Aransas NWR on the central Texas coast. There are presently only 534 whooping cranes left in the world (381 in the wild and 153 in captivity). Whooping cranes were in Louisiana historically, and LDWF hopes to bring them back to Louisiana and hopefully help increase the world's population.

LDWF biologists investigated the suitability of White Lake for the re-introduction of whooping cranes. This study was a cooperative effort with Dr. Sammy King and LSU. The study primarily evaluated forage availability on the properties 52,000 acres of fresh marsh. Through the use of throw traps, minnow traps and dip nets we sampled all aquatic macro-invertebrates, fish and crustaceans available for foraging whooping cranes. We also sampled vegetation height, density and composition in order to evaluate nesting potential of the property. Continuous water level recorders were installed at all sampling sites in order to evaluate the area suitable for foraging throughout the crane's annual cycle. Although the study focused on White Lake it also evaluated other wetlands in the area including but not limited to Rockefeller Refuge. Preliminary results of the survey indicate that White Lake is indeed suitable habitat for the whooping crane.

LDWF was pleased to host the Whooping Crane Recovery Team at the White Lake Lodge April 25-28, 2010. The Whooping Crane Recovery Team is the governing body charged with responsibility of the species. Primary duties include planning actions to protect the Aransas/Wood Buffalo natural flock and establishing two additional flocks in efforts to safeguard the whooping crane from possible extinction. The purpose of this particular visit by the recovery team was to allow this group of professionals the opportunity to experience first hand the vastness of Louisiana marshes and to discuss the possibility of the reintroduction of whooping cranes to their historic range, which included the marshes of White Lake. Following the recovery team's visit to White Lake, LDWF was pleased to discover that the Whooping Crane Recovery Team has recommended reintroducing an experimental, non-essential non-migratory whooping crane flock to White Lake. This will bring these cranes back into the last known historic nesting area of the species in the U.S., where they were present through the 1940s.

MARSH MANAGEMENT

The White Lake property consists of approximately 52,000 acres of fresh water marsh and 19,000 of agricul-

tural land. There are four separate management units that comprise the marsh. Within these marsh areas there are over 100 miles of trenasses, five water control structures, three pumping stations and over 30 miles of levees, all of which is operated, managed and maintained by White Lake personnel. Objectives of maintenance and manipulation of the refuge's system of levees and water control structures vary somewhat by management unit, but general goals are to maintain marsh health, provide conditions favorable for production of waterfowl food plants, and incorporate multi-species management when possible.

A portion of the levee system on Management Unit C (4805 acres impounded marsh) was breached and severely eroded as a result of the Hurricane Ike storm surge. The breach occurred on a well location canal ring levee in the West White Lake Field. Approximately 1,000 feet of levee was damaged and needed repair. Within a few days after discovering the levee breach we had LDWF equipment on site to repair the damages. The repair job took about three days and was successful in preventing the refuge area from completely flooding with salt-water.

As part of the overall management of the White Lake properties in the fall of 2008, a comprehensive set of Rules and Regulations was drafted and presented to the Wildlife and Fisheries Commission for approval. The White Lake Rules and Regulations were approved by the Commission and became effective in the spring of 2009.

MINERAL MANAGEMENT

There are three producing oil and gas fields on the White Lake property that were once operated by Amoco Production Company. Amoco sold the subsurface rights in these fields and all the facilities associated with these fields in the latter part of the 1990s to Hilcorp Energy Company. Hilcorp has since sold these fields that, for a period of time, were operated by three separate owner/operators. The West White Lake Field (approximately 1,500 acres) was owned and operated by Energy Quest. The Florence Field (approximately 1,920 acres) was owned and operated by Dune Energy Company. The South Kaplan Field (approximately 800 acres) was owned and operated by Texas Petroleum Investments. In the spring of 2010 Texas Petroleum Investments purchased the West White Lake and Florence Field and is now the sole oil and gas operator on the White Lake property. The State of Louisiana owns the surface of the property that comprises these three production areas. LDWF monitors surface activities and helps enforce the conservation terms of the agreements that were executed by and between Amoco Production Company, BP and the three owner/operators mentioned. Texas Petroleum Investments has responsibilities for maintenance of roads, levees, canals, bridges, etc.

BP retained the mineral rights to the remaining White Lake acreage that is not covered under the mineral properties sold to the above-mentioned operator. BP granted a mineral lease in 2010 to Mandalay Exploration Company on a portion of this acreage. LDWF/White Lake is currently negotiating a surface lease with Mandalay to facili-

tate the drilling of an exploratory well, which will be located on our agricultural property south of the GIWW.

MAINTENANCE OF FACILITIES & EQUIPMENT

There are approximately 20 acres of property associated with the White Lake Lodge Facility, Sporting Clay Course, Skeet Range, Birding Trail and Florence Canal Landing area. This acreage is maintained and landscaped throughout the year by White Lake staff personnel.

Routine maintenance on the White Lake buildings and equipment was conducted throughout the year. In the spring of 2010, our small barge developed a leak and had to be dry-docked. The bottom and knuckles on the barge were replaced. The barge was then completely sanded and repainted.

Routine maintenance was performed on our fleet of 25+ boats. Our four mud boats were dry-docked and repainted and other routine annual maintenance was done.

One of our engines that we use to manage water levels on refuge Area C needed repair work so it had to be removed and transported to a repair facility. This required the mobilization of a barge and crane in order to remove and then reinstall this engine once it was repaired.

FINANCIAL REPORT

Revenue	
Group Hunt Fees	\$407,500
Agricultural Leases	\$268,204
Hunting Leases	\$112,500
Alligator Egg Collection	\$0
Lottery Hunt Fees	\$60,840
Alligator Trapping Income	\$3,648
Interest Income	\$10,622
Mineral Bonuses	\$123,351
Surface Leases	\$13,750
Surplus Property	\$840
FEMA Reimbursements	\$6,422
Fishing Lottery	\$4,745

Expenditures	
Salaries	\$225,331
Wages	\$83,764
Related Benefits	\$93,037
Travel	\$0
Operating Services	\$135,494
Supplies	\$86,225
Professional Services	\$0
Other Charges	\$0
Acquisitions	\$46,360
Major Repairs	\$9,379
Interagency Transfers (insurance)	\$41,741

Totals	
Beginning Fund Balance	\$2,020,927
Total Revenue	\$1,012,422
Total Expenditures	-\$721,331
Ending Fund Balance 2009-2010	\$2,312,015

FURBEARER MANAGEMENT

MONITORING FUR HARVEST

The 2009-2010 furbearer harvest was monitored by compiling distribution and total harvest data. Each year, fur buyers and dealers are required to submit reports providing information on pelts purchased by species and parish of harvest. Annual audits of all fur dealers provide a record of total pelts by species shipped from Louisiana. River otter and bobcat possession tags provide data on timing and location of all bobcat and otter harvested in the state. These tags are necessary to insure that Louisiana otter and bobcat are tagged with federal export tags (a federal requirement for out-of-country shipment).

Records indicate a total of 1,623 trapping licenses were sold during the 2009-2010 trapping season. Of these, 1,552 were adult residential licenses, 21 were adult non-residential trapping licenses and 50 were youth residential licenses. These figures show a slight decrease in trapping licenses sold when compared to the previous season (1,704).

A total of 453,802 animals were harvested (all species) which was an increase of 110,634 from the previous season's total of 343,168. The total value of the 2009-2010 fur harvest to the state's trappers was estimated at \$2,279,396.59. This total value was an increase of \$557,700.67 from the previous season.

The nutria harvest (445,963) increased by 111,925 from the previous season's total of 334,038. The average nutria pelt price paid to trappers during this past season was \$1.50. An additional \$5 was paid for all nutria taken during the Coastwide Nutria Control Program (CNCP) by registered participants.

FUR ADVISORY COUNCIL

The Fur Advisory Council (FAC) continued to work towards its two major goals. The first goal of educating the public concerning the role of wildlife utilization in conservation is directly associated with the second goal of market enhancement for fur products.

FAC has come to the increased realization that without education of the public to counter misleading animal rights propaganda, enhancement of markets cannot be accomplished in the long-term. The educational module paired with the educational CDs continued to be a great success. Requests for sample skins and programs have been tremendous. Staff and volunteers presented at numerous schools and libraries during fiscal year 2009-2010. FAC continued with a presence at large public events such as the Louisiana State Fair and at educational workshops

such as the Environmental Education Symposium. Hundreds of school children visited the FAC booth at the State Fair daily for its three-week duration. The Web site carried the educational story to a much broader audience of teachers and students. The success of our education program will likely determine the future of markets.

FAC has struggled to find new strong and stable markets for Louisiana fur. The international fur market continues to be very dynamic, and many internal and external factors affecting buying trends and markets are still present. Mainland China still holds the brightest future for new and expanded markets and bought more Louisiana products this year. China is catching up with its knowledge base, and dealers are eager to learn about Louisiana furs. FAC attended fur shows in mainland China and Hong Kong during fiscal year 2009-2010. The Beijing Fur Show is bigger every year and buyers are very interested in Louisiana products. Louisiana fur dealers were able to sell furs based on contacts made at this show. FAC has followed a marketing plan of working in several countries that are gateways to China.

ALLIGATOR ADVISORY COUNCIL

The Alligator Advisory Council joined with FAC in all educational endeavors. They shared a booth at the State Fair and in other venues. School and library presentations addressed the educational needs of both councils. The Web site and CDs provide habitat management education related to the alligator industry as well.

The Alligator Advisory Council also concentrated on several issues associated with alligators and crocodilians in general through Convention on International Trade in Endangered Species (CITES) and USFWS programs and regulations. The 15th CITES Conference of the Parties met March 13-25 in Doha, Qatar. Primary issues discussed at this conference included small leather goods, Mexico's Morelets crocodile down listing, Madagascar's illegal trade, Egypt's Nile crocodile down listing, Colombia trade initiatives, Personal Effects and CITES Business Roundtable. The CSG Industry Committee met during the Lineapelli Leather Fair in Bologna, Italy. The purpose was to discuss impacts from the global recession, review "take the best and leave the rest" quality standards and consider other factors affecting sustainable use programs for crocodilians. There was clear consensus to further reduce impediments to legal trade; particularly ways to expedite CITES permitting through pre-signed permits and electronic permitting.

RESEARCH

The Fur and Marsh Management (FMM) Section continued research through grants and contracts during fiscal year 2009-2010. This section administered several continuing contracts concerning post-hurricane impacts to coastal marshes, vegetative damage caused by nutria, and nutria control techniques.

LDWF worked with Dr. Charles Sasser and Dr. Gary Holms from the LSU Coastal Institute on aerial survey data from CNCP over the past eight years to evaluate

recovery rates and other related issues to marsh recovery from the increased harvest rates of nutria.

LDWF conducted a sixth year of the Bobcat, Fox and Coyote Hunter Survey by taking a random sample (6 percent) of Louisiana big game license hunters from the 2008-2009 season. This information is used to estimate trends over time as to the number of bobcats within the state of Louisiana and the distribution of this species. This harvest data is needed to best manage the season.

LDWF worked with The Association of Fish & Wildlife Agencies on the development of "Best Management Practices for Trapping Swift Foxes and Kit Foxes in the United States" and "Best Management Practices for Trapping Striped Skunk and Mink in the United States."

LDWF worked with a Washington D.C. contractor on two bills:

- S.1519: Nutria Eradication and Control Act
- S.1965: Feral Swine Eradication and Control Pilot Program Act.

Both of these Senate Bills were supported by Louisiana Senators Landrieu and Vitter.

This section also monitors marsh conditions on the coastal WMAs and refuges. Marsh conditions are surveyed both on the ground and through aerial surveys. These surveys are indicators of general marsh health, abundance of aquatic vegetation for waterfowl, abundance of furbearers, and many other important components of these ecosystems.

F&MM personnel also collected data on alligator nest densities and wading birds and shorebirds that nest and feed on these areas, and participated in intensive coast-wide waterfowl surveys.

COASTWIDE NUTRIA CONTROL PROGRAM

CNCP is funded by the CWPPRA. The objective is to decrease the damage to coastal vegetation that is caused by nutria by increasing the incentive for harvest. During the 2009-2010 season, a total of 445,963 nutria tails, worth \$2,229,815 in incentive payments, were collected from 306 participants. Eighty seven participants (28.4 percent) turned in less than 200 tails, 59 participants (19.2 percent) turned in 200-499 tails, 30 participants (10 percent) turned in 500-799 tails and 130 participants (42.4 percent) turned in 800 or more tails.

Total Number of Nutria Harvested by Method of Take in 2009-2010

There were 19 parishes represented in the program with harvests ranging from 267 to 106,226 nutria per parish. Terrebonne Parish reported the highest number of tails with 106,226 followed by Plaquemines and St. Mary parishes with 69,294 and 67,631 respectively.

January was the most active month for harvesting nutria (130,206 tails) while November (22,277 tails) was the least active month (see CNCP 2010 Report, CWPPRA Project LA-03b).

Vegetative Damage Caused By Nutria

As a monitoring requirement of CNCP, a coast-wide aerial survey was conducted in the spring of 2010 covering the coastal parishes of Louisiana. The total number of sites visited in 2010 was 22, of which one was a new site while 20 were previously classified as damaged in the 2009 survey, and one converted from recovered in 2009 to damaged in 2010. The one new site was identified as nutria damaged.

There were no sites completely converted to open water, and nine nutria sites as well as one storm/muskrat related sites that recovered in 2009. Also, one site has converted to being all hog damage; whereas in 2009 it was one-half nutria and one-half hog damage.

Of the 11 damage sites visited in 2010, all 11 sites were related to nutria damage.

The 2010 survey identified 11 sites (nutria) with a total of 2,260 acres impacted by nutria feeding activity along transects (8,475 extrapolated). This is approximately a 58 percent decrease from the 20,333 damaged acres reported in 2009. CNCP continues to be a successful means of controlling the nutria population with an average of nearly 300,000 animals harvested annually. Consequently, the number of nutria-impacted acres in Louisiana's coastal marsh has also decreased significantly.

MARSH MANAGEMENT

FMM section staff continued to work with sponsoring agencies on several CWPPRA and restoration projects (i.e., annual monitoring and inspections) within Coastal Refuges and WMAs. These efforts have been greatly assisted through the utilization of approximately 20 YSI continuous data recorder stations which monitor critical water quality parameters (i.e., water depth, temperature, specific conductance and salinity) across south central and southwest coastal management and refuge areas. The recorders or "sondes" (Model: YSI 600LS) are currently located at:

- **State Wildlife Refuge (2)** - Lake Tom and the Hell Hole.
- **Marsh Island Refuge (7)** - Little Charles Bayou, Belly Dam Canal, Lucien Bayou, Lake Long and East Oyster Branch. In addition, two sondes are located within Northeast and Southeast management units.
- **Wax Lake (1)** - Wax Lake near East Pass.
- **Atchafalaya Delta WMA (1)** - Log Island Pass.
- **Point Aux Chenes WMA (4)** - Sondes are evenly distributed throughout the 5,000-acre impounded unit. One sonde was formerly located inside the Montegut impoundment; however, it has been removed. *NOTE: Please see overview of Point-aux-Chenes Hydrological Restoration Monitoring.*
- **Lake Salvador WMA (3)** - North End (Davis Pond), South West (adjacent to WMA camp) and Gulf Canal (adjacent to Lake Cataouatche).

POINTE-AUX CHENES HYDROLOGICAL MONITORING

(Initial Construction Completed: 2007)

LDWF was awarded a grant from NAWCA to construct a Water Management Unit on Pointe-aux-Chenes WMA. The 5,000-acre unit is located in the center of the Pointe-aux-Chenes WMA and has been managed to enhance a deteriorated salt marsh that is now 75 percent open water (NOTE: In 1956 this same area consisted of 99 percent vegetated marsh). LDWF's management priorities for this project include:

1. Re-establish emergent vegetation in shallow areas.
2. Increase plant and animal species diversity.
3. Reduce turbidity.
4. Increase submerged aquatics.

These priorities have been previously accomplished utilizing late winter/early spring draw-downs to expose shallow water bottom and edge to stimulate vegetative growth. During maintenance years, water levels would be maintained at marsh level and salinities would be limited to at or below 8 ppt.

LDWF is responsible for pre/post biological and hydrological monitoring/reporting of the Pointe-aux-Chenes impoundment. These monitoring and reporting activities include:

- Checking water levels and salinities at monitoring stations.
- Recording water control structure activities.
- Collecting fisheries samples (April-September).
- Conducting annual ocular vegetation composition.
- Conducting annual aerial waterfowl surveys.
- Conducting hunter participation/harvest surveys.

NOTE: A monitoring report which details key environmental parameters and habitat utilization is annually submitted to LDWF personnel and project collaborators.

Summary

LDWF efforts to reduce the influence of saltwater intrusion within Pointe-aux-Chenes WMA have been very limited. This has been principally due to staff's inability to regulate water flow within the impoundment. All three of the unit's water control structures (i.e., SI [Island Road], S2 and S3 [Fisheries Structure]) are essentially non-functional due to extensive damage associated with various named hurricanes. To date LDWF staff awaits resource allocation to add/repair/replace water control structures, levees and terraces designed to achieve the project's stated objectives.

MARSH ISLAND

FMM staff in collaboration with Coastal Operations continues to implement seasonal water level management at the Northeast Unit, Southeast Unit and Big Impoundment. These efforts are aimed towards reducing salinities and tidal scour, reducing turbidity, maximizing emergent vegetation in shallow areas, increasing emergent species diversity, and increasing submerged aquatic vegetation for migratory birds.

JOYCE WMA

FMM staff worked in conjunction with the Wildlife Division staff on the Joyce WMA and the impacts of the Hammond Wetland Assimilation Project. A significant change has been observed in marsh quality/quantity at Joyce WMA. Several environmental factors have been suggested either individually or combined as to the cause of the observed marsh damage. These factors include:

1. Tertiary-treated wastewater effluent (i.e., increased water flow [2-3 million gallons per day] with elevated nutrient content within Joyce WMA).
2. Nutria herbivory (i.e., marsh damage has been suggested to resemble herbivory damage associated with nutria, an introduced rodent species associated with extensive marsh herbivory/damage throughout the Louisiana coastline). See <http://www.nutria.com>.

FMM staff, in collaboration with LDWF staff (Christian Winslow), Dr. John Day (Comite Resources) and Dr. Gary Shaffer (Southeastern University), is in the process of evaluating these proposed causes. To date, a series of water samples have been collected, and five nutria exclosures have been evenly distributed throughout the affected area. *NOTE: These exclosure devices are designed to provide a qualitative assessment of nutria herbivory within the affected area at Joyce WMA.*

MINERALS MANAGEMENT

The Mineral Program is responsible for ensuring that mineral activities on all LDWF properties are compatible with the environment, and that WMA/refuge goals and objectives are met. Mineral Program staff reviewed and evaluated 77 well locations, pipeline projects and other mineral exploration related permits on LDWF properties. The program also issued two rights-of-way, three surface leases and three State Agency leases during fiscal year 2009-2010. All of these projects are reviewed and coordinated with field personnel to ensure that they are compatible with LDWF management area programs.

The Mineral Program generated fees in excess of \$21 million, which included mineral royalties, rights-of-way, surface leases and seismic fees. In addition, the Mineral Program staff issued 43 airboat/marsh buggy permits for various activities on LDWF properties. The Mineral Program also coordinated with the Office of Conservation for the removal of numerous abandoned oil and gas facilities on WMAs and refuges. The Mineral Program continues to work closely with other programs within LDWF and the Coastal Management Division within LDNR in the implementation of the efforts of the streamlining of Coastal Use Permits. In addition to the above mentioned duties, the Mineral Program has also undertaken the duties associated with LDWF's Dredge Fill Program. Approximately 75 to 100 dredge licenses are issued annually generating approximately \$1 million in annual revenue.

The Mineral Program also applied for and received five USACE permits for projects on LDWF properties. Two permits were for projects on White Lake, two permits for projects on Rockefeller Refuge, and one permit for a project on Manchac WMA.

HABITAT

The objectives of the Habitat Section are to gather and compile data on fish and wildlife resources, determine the requirements for conserving the resources, and provide information and technical assistance to governmental agencies, non-governmental entities and the public. Data are also gathered on the potential impacts of human activities on the resources. These data and recommendations are provided to regulators, planners and decision-makers in advance of execution of projects in order to avoid, minimize and/or mitigate any adverse environmental impacts. In fiscal year 2009-2010 the Habitat Section was divided into the five following programs: Louisiana Natural Heritage Program; Louisiana's Wildlife Action Plan and State Wildlife Grants; Statewide Environmental Investigations; Louisiana Natural and Scenic Rivers Program; and Permits Coordination.

The Habitat Section is comprised of 17 full-time technical staff members. Every member of the Habitat Section participated in LDWF's response to the BP Deepwater Horizon oil spill, including reconnaissance/recovery of oiled wildlife, leading media tours, monitoring sensitive habitats, recommending placement of boom and other protective measures, conducting pelagic surveys, assisting in Incident Command Center and field office operations, and coordinating wetland regulatory activities. A total of 195 man-days were dedicated to the response in fiscal year 2009-2010.

LOUISIANA NATURAL HERITAGE PROGRAM

LNHP gathers, compiles and disseminates information on unique, rare, threatened and endangered species, and unique, rare and critical habitats on the state, federal and international level. LNHP staff works with landowners to better manage their property for nongame, threatened and endangered species, and to promote Louisiana's native plant communities.

In fiscal year 2009-2010, LNHP staff conducted 1,160 project reviews and produced 26 digital data agreements for various public and private projects, assessing possible impacts on rare, threatened and endangered species and natural communities. A total of 310 new or modified Element Occurrence Records were entered into the LNHP database. An Element Occurrence Record includes precise locations, species population status, and habitat conditions and characteristics for a species or community of conservation concern. Department staff, federal and state agencies, and private consultants apply LNHP data to land use decisions, environmental impact assessments, resource management, conservation planning, endangered species reviews, research, and education.

The LNHP administered federal aid grants for species of special concern through the ESA, Section 6 Program and hurricane grants and participated in the SWG Program. Section 6 projects included the following species: Louisiana black bear; red-cockaded woodpecker; Louisiana pine snake; Louisiana pearlshell mussel; ringed map turtle; and the ivory-billed woodpecker. Hurricane grants from USFWS provided funds for winter plover and

gopher tortoise surveys. Projects funded through SWG included aerial surveys for swallow-tailed kite roosts, Monitoring Avian Productivity and Survivorship Program, Christmas bird counts, rusty blackbird surveys, longleaf pine surveys, coastal prairie restoration, digitizing plover, mussel and fish species data, state rare (S1, S2 and S3) species surveys, and the Natural Area Registry Program. In addition to SWG projects conducted by LNHP biologists, a contracted project to monitor the endangered plant, earthfruit, was directed and monitored by LNHP using the Natural Heritage fund. Staff also participated in the Louisiana Amphibian Monitoring Program.

During fiscal year 2009-2010, LNHP staff and the Barataria-Terrebonne National Estuary Program co-authored the *Atlas of Louisiana Sea Birds*. LNHP biologists also published in several peer reviewed journals. LNHP participated in the *Woodland Trails* and Parks bottomland hardwoods documentary, Louisiana Public Broadcasting's "A Summer of Birds" and Discovery Channel's *Wild Planet - North America*, and staff work was often featured in local newspapers.

LNHP completed the sixth and initiated the seventh year of monitoring landbird population responses to timber treatments at Sherburne WMA. During the 2009 field season, the project involved capturing, banding or recapturing over 3,200 landbirds and determining the age of each bird using Monitoring Avian Productivity and Survivorship Protocols (MAPS) developed by the Institute for Bird Populations. LDWF's participation in the nationwide MAPS program allows researchers to assess regional non-game landbird population trends as well as local population trends.

Staff participated in many events during fiscal year 2009-2010, including the following:

- Grand Isle Migratory Bird Festival.
- Neotropical Migratory Songbird Tour at Sherburne WMA.
- Becoming an Outdoor Woman workshop series.
- National Hunting and Fishing Day.
- Assisted producers of nature documentaries in locating and filming footage of Louisiana's natural heritage.
- Yellow Rails and Rice Festival.
- Cajun Coast Visitors and Convention Bureau's Eagle Expo.
- Various high school and elementary talks.

LNHP biologists partnered with the Acadiana Resource, Conservation and Development Council to restore a coastal prairie remnant in Acadia Parish. This site will serve as a native prairie plant seed source for future restoration efforts. Staff regularly provided technical assistance to project consultants concerning rare species and habitats. LNHP staff wrote a restoration plan to repair damage to a saline prairie in De Soto Parish and partnered with USFWS to monitor the repair of this site. Biologists worked with USFWS on bridge replacements to reduce impacts to the Louisiana pearlshell mussel. Longleaf pine savannah surveys were conducted and

technical assistance and management plans were provided to landowners.

LNHP joined with the staff of NRCS and USFWS to review 124 NRCS conservation practices utilized in Louisiana for promotion of natural resources conservation. The purposes for joining the multi-agency review were to increase ESA Section 7 consultation efficiency, to further the conservation of ESA-listed species and other rare species and natural communities in Louisiana, and to increase coordination between LDWF, NRCS and USFWS. The result of this multi-agency consultation was a document titled "Conservation of At-Risk Species in Louisiana." The document was completed in September 2009, after which nine statewide workshops were conducted to train NRCS staff on how to implement and utilize the technical guidance.

LNHP staff represented LDWF on numerous committees and at meetings including:

- LDWF Civil Restitution Committee
- Louisiana Universities Marine Consortium
- USFWS Freshwater Turtle Conservation Meeting
- Southeastern Partners in Amphibian and Reptile Conservation
- East Gulf Coastal Plain Joint Venture Management Board
- Southeast Partner's in Flight Management Board and Technical Committee
- Gulf Coast Joint Venture Landbird Monitoring, Evaluation and Research Team
- Mississippi Flyway Council Nongame Technical Committee
- Louisiana Wildlife Federation
- SWG Committee
- The Louisiana Pine Snake Conservation Committee
- Gopher Tortoise Council
- SE Land Trust
- LA Native Plant Society
- Louisiana Forestry Association

Staff also delivered presentations to various user groups regarding non-game resource issues.

In fiscal year 2009-2010, staff issued 104 Scientific Collecting Permits for research statewide. Also, LDWF enforcement cadets were given a presentation on amphibian and reptile laws/regulations. A seizure of illegal pythons was conducted in Oakdale, La.

Louisiana Natural Areas Registry, a program developed to provide landowners with the opportunity to voluntarily protect and manage significant natural heritage resources found on their properties, registered three new sites, giving the registry a total of 110 properties comprising 36,612 acres. Properties in the process of registration total over 8,000 acres. LNHP and the LDWF legal section worked towards the completion of LDWF's first servitude in Lincoln Parish. The easement process should be completed in fiscal year 2010-2011. Furthermore, four management plans were developed for landowners participating in the Natural Areas Registry.

LOUISIANA'S WILDLIFE ACTION PLAN & STATE WILDLIFE GRANTS

In November 2001, the Federal Government created the SWG Program. According to the Federal legislation, these grants were established "for the development and implementation of programs for the benefit of wildlife and their habitat, including species that are not hunted or fished." The SWG program receives annual Congressional appropriations. USFWS apportions these funds to state fish and wildlife agencies. Since 2002, LDWF's annual apportionment has been approximately \$1 million.

Congress stipulated that each state fish and wildlife agency that wished to participate in the SWG program must develop a Comprehensive Wildlife Conservation Strategy by October 2005. In response, LDWF developed a comprehensive planning document that would guide LDWF's use of SWG grant funds for the next 10 years. The document, known as the state's Wildlife Action Plan (WAP), was submitted for approval to the National Advisory Acceptance Team and subsequently approved in December 2005. In summary, the WAP is the blueprint guiding LDWF's use of SWG funds.

During fiscal year 2009-2010, eight SWG grants were closed. The SWG Coordinator insures that copies of all final reports for each of the closed SWG grants are made available to interested parties.

During fiscal year 2009-2010, 18 new project proposals were received for funding consideration. Fifteen proposals received approval by the SWG Committee by the end of fiscal year 2009-2010. These projects include:

- Reintroduction of the Whooping Crane.
- Kemp's Ridley Habitat and Distribution.
- Inventory of Species and Habitats on Natural & Scenic Rivers.
- Bear Conflict Management Program (Segment 2).
- Promotion of Prescribed Burning in the East Gulf Coastal Plain.
- Southwest Louisiana Grassland Prescribed Burn Initiative.
- Southwest Louisiana Grassland Restoration Initiative (Segment 2).
- Fish Assemblages on Manmade Structures in the Gulf of Mexico.
- Natural Community Inventory Enhancement.
- RCW Management at Alexander State Forest WMA.
- Louisiana Herpetofaunal Surveys.
- Breakwaters and Barrier Island Marshes (LSU).
- Effects of Habitat Edges on Nesting Success of Painted Bunting (ULL).
- Assessing the Impacts of Low-head Dams on the Genetics of Etheostaminate Darters in the Pearl River Basin.
- SWG Coordination – Segment 4.

In addition, after grant closings on June 30, 2010, there remained 32 ongoing SWG-funded projects. Of the new proposals, only "Reintroduction of Whooping Cranes"

had not been submitted as an application to USFWS. All others were awaiting funding approval. Twelve amendments had been submitted and approved by the USFWS Region 4 Office.

To ensure the WAP remains adaptive to the needs and goals of LDWF, two critical/emerging issues letters were submitted to the USFWS Region 4 Office. These letters highlighted four new issues of concern: whooping crane reintroduction; climate change; Kemp's Ridley distribution; and oil spill events. The letters were approved by USFWS and incorporated as amendments to our WAP, allowing LDWF to utilize SWG funds to address these issues in the future. These issues will be adopted into the next WAP revision if they remain a concern.

An Endangered Species license plate was developed as an additional funding source for wildlife diversity research and surveys. The plate was expected to feature a whooping crane. The legislation was developed in April 2010. The Louisiana Legislature revised and adopted the bill into law in June 2010.

To distribute WAP information to a wider audience, staff authored an article for the *Wildlife Insider* newsletter and the *Louisiana Association of Professional Biologists* newsletter. For more information about the WAP, please visit <http://www.wlf.louisiana.gov/wildlife/wildlife-action-plan/>.

STATEWIDE ENVIRONMENTAL INVESTIGATIONS

Statewide Environmental Investigations is authorized under the Fish and Wildlife Coordination Act and is partially funded by a USFWS grant. Staff is responsible for reviewing and providing comments and mitigation recommendations on all permits sought from state and federal environmental regulatory agencies, primarily LDNR and USACE. Staff members received and reviewed 1,772 state and federal permit applications during fiscal year 2009-2010 (the highest total on record). It was determined that compensatory mitigation was required on approximately 400 of the 1,772 projects reviewed. Written comments and recommendations aimed at avoiding, minimizing and/or mitigating adverse impacts were issued by LDWF for all state and federal permit applications received.

Staff saw a significant increase in the number of USACE Vicksburg District Section 10 permit applications for the withdrawal of surface water classified as waters of the United States. These water withdrawal requests were primarily for hydraulic fracturing of shale formations in the Haynesville Shale of northwest Louisiana. LDWF responded to all such permit requests with recommendations on how to conduct these substantial water withdrawals while also avoiding adverse impacts to fish and wildlife resources.

In addition to permit review, staff participated in permit site inspections and habitat evaluations, provided technical assistance to the public on wetland issues and worked

with private developers and consultants involved in the regulatory process. During fiscal year 2009-2010, staff conducted 107 on-site field inspections and participated in 104 meetings with applicants, agents and regulatory agency personnel.

Staff members also represented the agency on two Mitigation Bank Interagency Review Teams chaired separately by the USACE Vicksburg and New Orleans districts. The purpose of the Interagency Review Teams is to provide regulatory review, approval and oversight of wetlands mitigation banks. During fiscal year 2009-2010, staff evaluated, inspected and provided technical comments and recommendations on approximately 40 proposed wetlands mitigation banks. A total of 18 wetland mitigation banks were approved and authorized in Louisiana during fiscal year 2009-2010, totaling over 7,300 acres. Staff also attended all Interagency Review Teams meetings and as many of the site investigations as was possible.

Staff worked closely with the Louisiana Department of Transportation and Development to develop the State Reservoir Priority Development Program. The intent of the State Reservoir Priority Development Program is to prioritize state-funded reservoirs to meet a range of water resource and economic development needs. LDWF's purpose was to ensure that sound evaluation criteria were developed and that environmental issues (e.g. fish and wildlife habitat, wetlands, Scenic Rivers, and threatened and endangered species) were thoroughly considered in the reservoir evaluation and ranking process.

Staff continued to serve on the Louisiana Ground Water Resources Commission which met bimonthly. The purpose of the commission is to develop a statewide water management plan not only for ground water use and conservation, but also for surface water. The Commission is working to complete the comprehensive plan in early 2011.

Staff continued to provide technical assistance to USACE related to post-hurricane (i.e., Katrina, Rita, Gustav and Ike) levee refurbishment, planning of improved hurricane protection systems, and identification of suitable compensatory mitigation to offset implementation of such systems.

Staff was involved in the planning and evaluation of 18 proposed Federal Energy Regulatory Commission (FERC) projects. FERC regulates the interstate transmission of natural gas, oil and electricity. Twelve of these projects included the installation of natural gas pipelines which affected several Louisiana parishes and often posed significant adverse impacts to wetlands, stream crossings, riparian corridors, species and communities of conservation concern, and other fish and wildlife resources. Six of the FERC regulated projects were for hydroelectric power. Staff worked with the applicants, agents and FERC in the planning and evaluation phase to avoid, minimize and/or mitigate these adverse impacts.

LDWF worked with numerous governmental agencies in conducting environmental investigations including: USFWS; National Marine Fisheries Service; EPA; USACE; U.S. Forest Service; the USDA NRCS; Federal Highway Administration; Federal Aviation Administration; Farmers Home Administration; USCG; Department of Energy; FERC; Department of Defense; Housing and Urban Development; Louisiana Department of Transportation and Development; LDNR; Louisiana Department of Environmental Quality; and the Louisiana Department of Culture, Recreation and Tourism.

Statewide Environmental Investigations also assisted in protecting all lessees of private oyster grounds by reviewing and approving, sometimes with modification, water bottom assessments submitted by project applicants prior to the initiation of activities affecting state water bottoms under lease to private parties for oyster production. Coastal Use Permit applicants can be required, at the request of Statewide Environmental Investigations staff, to modify the activity if the proposed location unnecessarily impacts an oyster reef. There were 76 water bottom assessments reviewed and approved by agency staff during fiscal year 2009-2010.

LOUISIANA NATURAL & SCENIC RIVERS PROGRAM

The Scenic Rivers Program is charged with the administration of the Louisiana Natural and Scenic Rivers Act. The act requires that LDWF, through the Scenic Rivers Coordinator, administer a permitting system for activities that have potential for significant ecological impact to designated natural and scenic rivers, as well as a system of monitoring, surveillance, investigation and enforcement for the purpose of insuring compliance with the act. The Scenic Rivers Act, and the rules and regulations promulgated under its authority, provide for the development of management plans, stream surveys and enforcement. There are currently approximately 80 streams and/or stream segments in the system constituting an estimated 3,000 linear miles of Louisiana's streams, rivers and bayous.

Bayou Liberty in St. Tammany Parish was designated a Louisiana Natural and Scenic River during the 2010 Regular Session of the Legislature. This resulted in an average addition of one stream per year to the system over the previous 12 years.

Several enforcement actions were initiated in fiscal year 2009-2010. These included cases of illegal mining activities, littering, illegal point source discharges, operating on scenic rivers without permits, illegal bridge construction, and illegal commercial cutting of trees. One case of illegal mining in East Baton Rouge Parish, made in 2009, remains in litigation. The coordinator and staff, through routine surveillance, project inspections and response to complaints, ensured compliance with permit conditions, utilization of adequate sediment control measures and appropriate clean up and restoration of permitted project sites.

Staff has continued to work with the Webster Parish Police Jury and the State Land Office to remove a number of out-of-service bridges and other man-made obstructions on Bayou Dorcheat, thus restoring navigability and natural flow to the stream. In addition, working with the Webster Parish officials, the State Land Office, local businesses and citizens groups, 87 wood duck boxes with engraved mile markers were constructed and made ready to be placed along Bayou Dorcheat to aid boaters in navigation and enhance wildlife habitat along the bayou.

The coordinator and staff maintained regular contact with both state and federal agencies to insure that designated scenic rivers were considered in all levels of planning and permitting. They also worked closely with city planners, police juries, mayors and local interest groups and organizations throughout the state. The coordinator gave three presentations on the Scenic Rivers Program to local civic organizations and continued to participate on a parish government board formed to restore and promote Bayou Dorcheat in Webster Parish.

Three emergency Scenic River Permits were issued. Two were for the emergency repair of a power line and the emergency construction of a natural gas supply line. Both of these were presented as emergencies in that they were needed to maintain continued power and/or heating to peoples' homes during peak winter usage. One was for emergency repairs to address an erosion problem that might have led to the collapse of a Wastewater Treatment Plant into the Abita River. All of these were issued with conditions that required they be conducted in a manner that did not harm the environment, and one permit required mitigation in the form of replanting and monitoring (to ensure success) of the impacted site.

A total of 17 Scenic River Permits were issued during fiscal year 2009-2010. The coordinator and staff conducted 77 site visits and field investigations statewide, surveyed approximately 81 stream miles and attended 10 meetings specific to Scenic Rivers issues.

PERMITS COORDINATION

The purpose of Permits Coordination Program is to ensure that LDWF receives reviews and responds and distributes comments and mitigation recommendations on all permit notices received from state and federal environmental regulatory agencies in an efficient and timely manner (i.e. prior to public notice comment period deadlines). LDWF's written comments are in-turn used by the regulatory agencies to make final determinations on how best to avoid, minimize and/or mitigate adverse impacts to fish and wildlife resources.

In order to accomplish this task, the LDWF Permits Coordinator serves as the primary liaison and "single point of contact" for all regulatory agencies, primarily LDNR and USACE. It is the responsibility of the Permits Coordinator to ensure that the LDWF biologist with the appropriate authority and expertise is included in the formulation of written comments and mitigation recommendations. The Permits Coordinator also ensures that there

is adequate department representation at all LDNR Geologic Review and pre-application meetings.

The Permits Coordinator also utilizes, maintains and populates a comprehensive searchable database for all permit notices. This database is of critical importance to ensuring a timely response from LDWF. During fiscal year 2009-2010 several enhancements were made to improve the tracking ability, accuracy and usefulness of the permits database.

The most significant event that occurred during the fiscal year was the receiving and processing of a record number of Emergency Use Authorizations from LDNR and USACE in the wake of the BP Deepwater Horizon oil spill. New permit notice processing protocols were developed and implemented to meet the demand for expedited LDWF reviews and responses. These protocols will now be employed should future events of this magnitude occur.

During fiscal year 2009-2010, the Permits Coordinator received, processed, tracked and disseminated responses to 1,772 permit notices.

ALLIGATOR PROGRAM

Louisiana's Alligator Management Program consists of two complex segments: research/management of the wild population and a statewide farm/ranch program. The program is funded by self-generated revenues (alligator hide tag fees, shipping label fees, other alligator related fees and alligator hide severance taxes).

WILD ALLIGATOR PROGRAM

Inventory methods, harvest regulations, tagging and reporting requirements, and a complex computer program are continually upgraded to regulate and monitor a sustainable use alligator management program in Louisiana. Annual coast-wide alligator nest surveys are conducted to index alligator populations and to establish harvest quotas in coastal Louisiana. During summer 2009 we estimated that 24,793 alligator nests were present in the coastal marsh habitats (*Figure 1*). Coastal habitats have recovered significantly from the 2005 and 2008 hurricanes and the 2006 and 2009 droughts.

Wild alligator harvest quotas are established to correlate harvest with alligator population density and distribution. Alligator harvest tags are allocated to individuals who either own or lease land that is considered alligator habitat. Digital landowner and survey information are combined with the latest aerial photography images to allow for an accurate assessment/classification of each participant's property. The majority of the lands enrolled in the wild alligator harvest program have been entered in the GIS system.

In late August and September 2009, the annual wild alligator harvest produced 9,126 alligators, which averaged 7.5 feet in total length and had an estimated value of over \$1.5 million. Beginning in late winter 2008 and continuing into spring and summer of 2009, the worldwide economic recession significantly impacted world trade in raw

and tanned alligator skins and manufactured products. Price and demand for wild and farm-raised alligator skins dropped precipitously during this period. The drop in price and demand coincided with the economic recession and with tanners implementing stricter quality standards. During 2010, demand and price for both wild and farm-raised alligators began to recover. It is anticipated that price for wild alligators harvested in 2010 will increase as compared to 2009. Adult-sized alligators (those 6 feet and larger) comprised the majority of the harvest (*Figure 2*).

LDWF provided additional alligator harvest opportunities by continuing its lottery alligator harvest program. In 2009 the lottery alligator harvest program provided opportunities for 284 alligator hunters to harvest 725 alligators. Lottery alligator harvests were conducted on 31 public areas (15 WMAs and 16 public lakes) throughout the state.

FARM ALLIGATOR PROGRAM

The December 2009 statewide farm/ranch inventory totalled 388,540 alligators, down from a record 731,909 in December 2008. This decline was due in large part to the worldwide economic recession, and farmers voluntarily limited their egg collections in summer 2009. The 2008 farm harvest, September 2008 - August 2009, was 286,645 with a base value of \$45.5 million. Average belly width of farm raised alligators was 26.4 centimeters (4.3 feet in length) with the majority of the harvest comprised of 18-32 centimeters belly width alligators (*Figure 3*).

During 2009, a total of 400,875 wild alligator eggs were permitted for collection. A total of only 29,822 wild alligator eggs were collected producing 25,077 hatchling alligators; again, these numbers are lower than average due to the economic recession and lower demand for high end luxury fashion items made from alligator hides. Farmers are required to return 12 percent of the hatchlings as 4-foot alligators, which compensates for the collection of eggs. The remaining animals can be sold by the farmer. During 2010, a total of 27,122 farm-raised alligators were released to the wild. All released alligators were measured, marked, tagged and sexed. Survival of farm-released alligators appears to be similar to wild alligators. Re-trapped alligators were harvested in September 2009, though harvest effort was lower than usual, due to the economic recession and low demand and modest prices. Data evaluation continues on survival rates of the farm released alligators.

Program staff routinely communicates with various alligator industry participants including hunters, farmers, landowners and dealers. Information is provided regarding wild alligator and alligator egg harvests, harvest statistics and management recommendations. Staff routinely visits alligator farms providing recommendations on alligator husbandry and culture. Numerous requests for information are handled each year.

HURRICANE IMPACTS

Coastal Louisiana was impacted by devastating hurricanes in 2005 and 2008. In both of these years, storm

surges inundated coastal marshes with high salinity waters across virtually the entire coast of Louisiana; which is prime alligator habitat. Some direct alligator mortality was observed, but overall long-term impact of these storms on alligator habitat remains to be seen. Direct physical damage to wetlands through scour, scrapes, erosion and rolling has been noted, and high salinities were accentuated by lower than usual winter rainfall after the storms, which might have tempered the deleterious salinities. Effects of these storms on the subsequent wild alligator harvest were significant in 2006; but harvest numbers in 2007 and 2008 returned to pre-storm levels.

RESEARCH ACTIVITIES

The following provides a summary of the various research and monitoring projects that the alligator program staff conducted and/or participated in during fiscal year 2009-2010.

Monitoring

Evaluation of Survival, Growth and Reproduction in Farm-released Alligators

This activity involves numerous projects related to survival analysis, growth and reproductive success (farm-released vs. native wild). Due to the recent reduction of the 14 percent release rate, it is imperative to monitor survival closely. This will be even more important in the future, as the 12 percent return rate started with the 2007 permits (releases "due" in 2009). Although some growth information has been published, we plan to evaluate growth rates in more detail; we now have "retraps" that were captured 10-15 years since release, and this is undoubtedly one of the largest mark-recapture projects currently in progress. Staff from the LSU Department of Experimental Statistics assists with annual evaluation of survival based on farm "re-traps" recovered in September harvests. We are also evaluating dispersal of animals from release sites, and are preparing a manuscript for publication in the scientific literature.

Coast-wide Nest Survey

The annual coastal nesting survey is essential for monitoring our alligator population, and is used annually to determine wild alligator and wild alligator egg harvest quotas (for the adult harvest each September as well as egg ranching quotas). This is an integral part of our required "finding of no detriment" needed for export authority. This survey was of particular interest in summer 2006, providing valuable information to evaluate the impact of Hurricanes Katrina and Rita, and the worst drought in 111 years that occurred in fall/winter/spring of 2005-2006. We collected similar such needed information in 2009, due to Hurricanes Gustav and Ike striking in 2008. Nesting in June 2010 was average, with many areas having been adversely affected by drought conditions.

Evaluation of Statewide Harvest Program

We continue to analyze size class frequency distribution, average size, sex ratios, etc. for alligators harvested each year. This project, coupled with the coast wide nest survey will be continued as long as a harvest program is in

FIGURE 1.

Louisiana Coastal Marsh Alligator Nest Production (1970-2009)

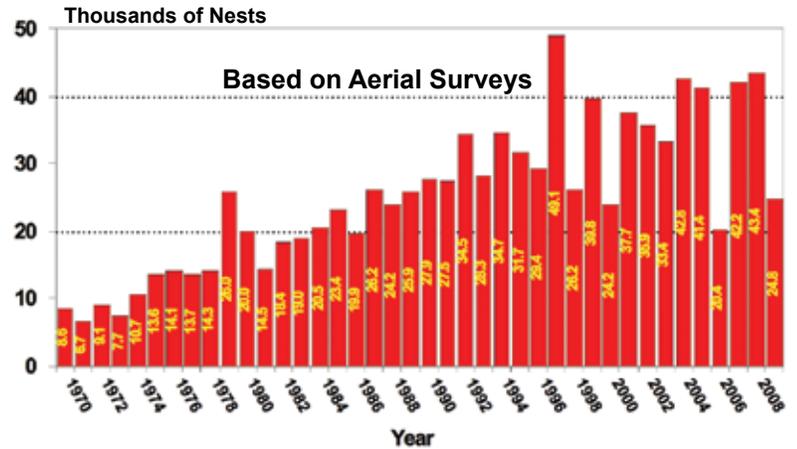
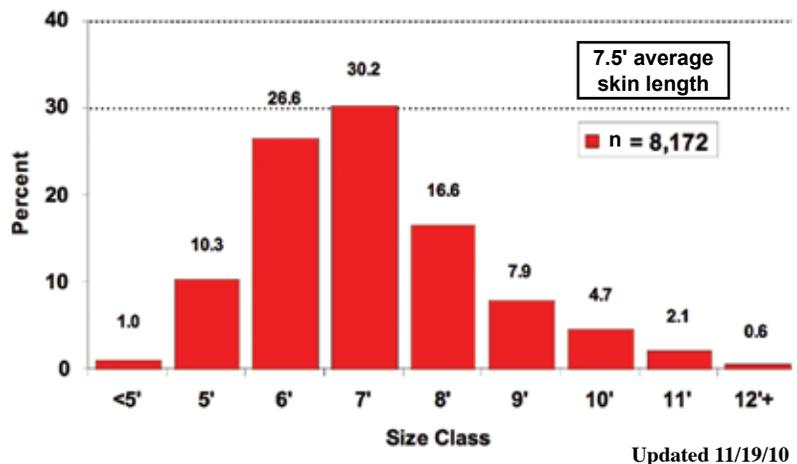


FIGURE 2.

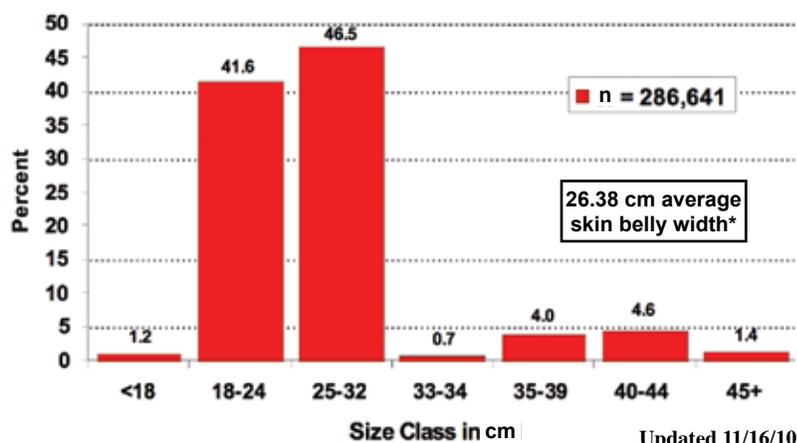
Louisiana Wild Alligators Harvested 2009 Regular Harvest Skin Lengths



Updated 11/19/10

FIGURE 3.

Louisiana Farm Alligators Harvested 2008 Skin Belly Widths



Updated 11/16/10

*Skin lengths averaged approximately 51 inches, 2008 Tag Year

place. Data generated from these projects provides the basis for evaluating the impact of our current harvest strategies, and for establishment of annual wild harvest quotas.

Evaluation of Alligator Nest Density

LDWF biologists work with selected cooperating alligator farmers to gain access to their GPS data from annual egg collections. This study will facilitate comparisons between our coast-wide nest survey and estimates of nest density as recorded by the farmer during egg collections. Some farmers have advised staff of reduced nest production on selected wetlands; this study will allow us to evaluate nest distribution and density changes over time. Data from 2006 was particularly important for comparisons due to the massive impacts of Hurricanes Katrina and Rita in late 2005. We anticipate similar such needed information in 2009, due to Hurricanes Gustav and Ike striking in 2008. The nesting survey was started in fiscal year 2008-2009 and completed in fiscal year 2009-2010, as preparation and some early flights can start in late June of each year, often the majority of the survey is completed in early July of the next fiscal year.

West Nile Virus (WNV)

LDWF, in conjunction with LSU School of Veterinary Medicine, continues to monitor occurrence of WNV on alligator farms in Louisiana. Initial mortality related to WNV occurred in fall/winter 2003. Aggressive mosquito control on farms has reduced on-farm mosquito populations and seems to have reduced the incidence of WNV in recent years. Studies have determined that WNV exposure is a predisposing factor in development of "PIX/LPSA" skin lesions. If needed, farmers can contact LDWF staff or our collaborators at LSU School of Veterinary Medicine if they suspect a WNV outbreak.

Contracts

Diagnostic Services

Dr. Nevarez, LSU School of Veterinary Medicine, is contracted to provide diagnostic services as needed for the alligator industry. Farmers may consult with Dr. Nevarez at any time for assistance with any alligator husbandry or disease issues.

LSU Experimental Statistics

The LSU Department of Experimental Statistics is under contract to provide technical statistical expertise for numerous alligator projects; most importantly, the evaluation of survival of farm-released alligators, population trends from nesting survey data, and more recently, hide grade/length correlations, growth of farm-released and wild alligators, and dispersal of wild alligators.

Evaluate the Health Status of Farm-released Alligators

Numerous alligators originating from several different farms were sampled to evaluate their overall health at the time of release. Biopsies were taken of colonic tissue and blood samples were drawn to analyze the plasma and serum. Study results indicate that the released alligators are healthy, that WNV remains one of the most important infectious diseases for captive-reared alligators, and that

continued surveillance is necessary. Alligators brought into Louisiana from Georgia for release were found to be of poorer health than Louisiana-reared alligators, and further release of these animals should be closely monitored. Continuation of this study is planned for 2010-2011.

Determine the Use of Antibiotics on Alligator Farms in Louisiana and Determine the Pharmacokinetic Disposition and Tissue Distribution of Tetracycline After Single-dose Administration

Phase 1 of this project was completed with some difficulties encountered in achieving therapeutic levels of tetracycline in alligators. Several trials were conducted in order to determine dosage rates. In 2008-2009, this research continued to determine tissue distribution levels and elimination rates. Final results indicated that due to high level of variability in the concentration of tetracycline in alligator tissues and plasma, tetracycline is not a recommended antibiotic to be administered orally to captive-reared alligators. In 2009-2010, a pilot study was conducted to determine the appropriate dose of the antibody trimethoprim-sulfadiazine administered orally to alligators; this antimicrobial was absorbed much better and results of importance in consideration of treatment of disease in farmed alligators.

Other Research

We spent considerable effort to testing telemetry units for practical methods to attach to juvenile alligators and test range of reception. This may be helpful in monitoring the survival of farm-released alligators. Our biological staff constructed an outside holding pen to test the telemetry unit attachment on wild and farm alligators.

Unfortunately the pen was damaged by Hurricane Ike in September 2008, and alligators escaped; however the few recaptured held the telemetry units snugly in place. We held the alligators recaptured at Rockefeller and showed long-term retention of the telemetry units during 2009-2010; units were eventually removed by staff and alligators released.

Dr. Dan Janes from Harvard University continued molecular biology work on alligator embryos provided by LDWF, as did other collaborators and university professors and graduate students. In summer 2007 we similarly assisted Dr. Matt Bonnan and his graduate students with samples for differential limb scaling studies; a study was published in 2009 in *The Anatomical Record*, another paper on calcification of archosaur long bones is currently "in press" after being written, reviewed and accepted during fiscal year 2009-2010.

We are currently collaborating on projects with Dr. Mark Merchant (unfunded) to evaluate anti-microbial properties of alligator plasma. Although diseases are generally rare in alligators, this work may help on the rare occasion of disease in farmed alligators, in terms of evaluating cause and treatment options. Again, we assisted in the expansion of this work with a collaborator of his from LSU's Chemistry Department, evaluating peptides by providing large volumes of blood for leukocyte extraction.

We have several years of data on alligator dispersal (caught live on Rockefeller, and subsequently harvested "off" Rockefeller). Several have migrated very long distances (20-35 miles) which is important data to consider in evaluating our farm "release to the wild" program. Additional data collected in September 2008 and 2009 helped us evaluate effects of Hurricane Rita and severe drought on alligator displacement. A manuscript was submitted for possible publication in the scientific literature.

We worked with anatomists in evaluating sources of calcium for eggshell development. Several abstracts were published and presentations made at international conferences. A full manuscript is currently being prepared.

We continued to support and collaborate with a post-doctoral research associate and a PhD student with their work on oxygen levels in developing alligator embryos. Several abstracts were published and presentations made at scientific conferences. Associates from UC Irvine were hosted at Rockefeller in June 2010 to collect additional embryos, as well as cardiovascular structures and limbs from a range of sizes of alligators for several studies.

We published a paper on multi-year multiple paternity and mate fidelity in alligators; an abstract was presented at the Joint Meeting of Ichthyologists and Herpetologists in July 2009.

We had previously hosted a graduate student from the Royal Veterinary College in London and collected samples in support of his doctoral research; we co-authored a manuscript published in the *Journal of Anatomy* in early 2010.

Drought conditions allowed us to photograph numerous sets of alligator tracks at the request of Dr. Jim Farlow at Indiana University-Purdue. We co-authored a manuscript on footprints and trackways of alligators which correlates with Dr. Farlow's paleontology studies.

We published a manuscript on alligator spermiogenesis with Dr. Kevin Gribbins, who did part of his doctoral research at Rockefeller Refuge. We assisted a graduate student with his research on use of stable isotopes to determine alligator diet (non-invasive); the manuscript is in review. We also supported Dr. Uriel Zapata with his doctoral research on material properties of alligator mandibular cortical bone. These studies were published in the journal *Bone*, and follow up studies are underway.

We studied the use of rodenticide baits (to control nutria) to determine if they would have a deleterious effect on alligators if secondarily ingested. A paper was published on these findings in a toxicology journal.

Our research efforts have been hampered in large part by lack of holding facilities for alligators. We had a small functioning laboratory, but the tremendous physical plant losses due to Hurricanes Rita and Ike have limited our progress. This lab was a shared room in the maintenance workshop and is now not usable due to repairs to the shop. Our biological staff constructed a cover/awning to

the semi-repaired holding tanks, which has helped. Initial work done to supply adequate heat to holding tanks was completed in spring 2009, and minor repairs continued this fiscal year. We met several times during fiscal year 2009-2010 to discuss schematic drawings for a new lab and holding facility.

PUBLICATIONS/COOPERATIVE RESEARCH

The following scientific papers were published from approximately July 2009 - June 2010:

Bonnan, M. F., J. L. Sandrik, T. Nishiwaki, D. R. Wilhite, and R. M. Elsey. 2009. Calcified cartilage shape in extant archosaur long bones reflects overlying joint shape in load-bearing elements: implications for inferring dinosaur joint shape. (Abstract). Presented at the 69th Annual Meeting of the Society of Vertebrate Paleontology, Bristol, United Kingdom. *JVP* 29 (3):67A-68A. September 2009.

Elsey, R. M. and C. Aldrich. 2009. Long distance displacement of a juvenile alligator by Hurricane Ike. *Southeastern Naturalist*. 8(4):746-749.

Lance, S. L., T. D. Tuberville, L. Dueck, C. Holz-Schietinger, P. L. Trosclair, III, R. M. Elsey, and T. C. Glenn. 2009. Multi-year multiple paternity and mate fidelity in the American alligator, *Alligator mississippiensis*. *Molecular Ecology*. 18:4508-4520.

Lance, S. L., T. D. Tuberville, R. M. Elsey, P. L. Trosclair, III, and T. C. Glenn. 2009. Multi-year multiple paternity and mate fidelity in the American alligator, *Alligator mississippiensis*. (Abstract). Presented at the Joint Meeting of Ichthyologists and Herpetologists, 22-27 July, 2009, Portland, Oregon.

Allen, V. R., R. M. Elsey, N. Jones, J. Wright, and J. R. Hutchinson. 2010. Functional specialization and ontogenetic scaling of limb anatomy in *Alligator mississippiensis*. *J. Anat.* 216:423-445.

Farlow, J. O. and R. M. Elsey. 2010. Footprints and trackways of the American alligator, Rockefeller Wildlife Refuge, Louisiana. *New Mexico Museum of Natural History and Science Bulletin*. 51:31-39.

Gribbins, K. M., D. S. Siegel, M. L. Anzalone, D. P. Jackson, K.J. Venable, J. L. Rheubert, and R. M. Elsey. 2010. Ultrastructure of spermiogenesis in the American alligator, *Alligator mississippiensis* (Reptilia, Crocodylia, Alligatoridae). *J. Morph.* 271:1260-1271.

Lance, V. A., R. M. Elsey, G. Butterstein, P. L. Trosclair, III, and M. Merchant. 2010. The effects of Hurricane Rita and subsequent drought on alligators in Southwest Louisiana. *J. Exp. Zool.* 313A:106-113.

Owerkowitz, T., F. C. Andrade, R. M. Elsey, and J. W. Hicks. 2010. Atmospheric hypoxia increases bone robusticity in the American alligator. (Abstract). Society for Integrative and Comparative Biology meeting, Seattle, Washington. Jan. 3-7, 2010.

Owerkowitz, T., F. C. Andrade, R. M. Elsey, and J. W. Hicks. 2010. Atmospheric hypoxia increases bone robusticity in the American alligator. (Abstract). Experimental Biology meeting. Anaheim, California. April 24-28, 2010.

Witmer, G. W., J. D. Eisemann, T. M. Primus, J. R. O'Hare, K. R. Perry, R. M. Elsey, and P. L. Trosclair. 2010. Assessing potential risk to alligators (*Alligator mississippiensis*) from nutria control with zinc phosphide rodenticide baits on Louisiana coastal marshes. Bull. Environ. Contam. Toxicol. 84:698-702.

Zapata, U., K. Metzger, Q. Wang, R. M. Elsey, C. F. Ross, and P. C. Dechow. 2010. Material properties of mandibular cortical bone in the American alligator, *Alligator mississippiensis*. Bone. 46:860-867.

COASTAL STEWARDSHIP OPERATIONS

The Coastal Operations Program includes stewardship of all WMAs and refuges within LDWF's Coastal and Nongame Resources Division, with the exception of Rockefeller Refuge and White Lake Conservation Area. These areas include Atchafalaya Delta, Biloxi, Lake Boeuf, Pass-a-Loutre, Pointe-aux-Chenes, Salvador and Timken WMAs, and Isles Dernieres Barrier Islands, Marsh Island, State Wildlife and St. Tammany refuges. New to this program this year is the addition of the Oil Spill section. This section responds to all significant oil spills within the state and assesses damage to wildlife for potential restoration.

Dominating this year's report was the explosion of BP's Deepwater Horizon Oil Rig. Coastal Operations staff were intimately involved with the longstanding oil spill response to protect coastal habitats and lead the wildlife recovery and rehabilitation efforts. Staff established field command centers in Hopedale, Pass-a-Loutre WMA, Grand Isle, Myrtle Grove, Cocodrie, Burn's Point, Intracoastal City, Atchafalaya Delta WMA, and Marsh Island Refuge. These command centers were bases of operations for our staff conducting wildlife recovery. They also met daily with federal, state and local governmental agencies, as well as private contractors, to report findings in their areas and plan response strategies for the upcoming days and weeks.

Prior to the oil making landfall, Coastal Operations staff teamed up with Wildlife Division staff to conduct "pre-incident" nesting searches across all of coastal Louisiana and identified 146 areas for immediate protection. This information was presented to the Incident Command as "top priority" habitats for boom placement. During the climax of the oil spill, staff were capturing/collecting a few hundred wildlife impacted by the oil per day. Staff also recorded and reported daily on oil impacts and boom conditions from State Wildlife Refuge to Lake Bourne. Their knowledge of the local waterways was essential to the successful implementation of several operational strategies.

In addition to the BP Deepwater Horizon spill, the Oil Spill section responded to 30 additional releases including Eagle Otome in Sabine, Chevron on Delta Refuge, and CEYDECO in Mud Lake. This section is also developing and finalizing natural resource damage assessments for several cases including Little Lake, Mosquito Bay, and Joseph Bayou I and II, as well as coordinating with USFWS to develop and implement natural resource damage assessments for the BP Deepwater Horizon spill.

Prior to the BP Deepwater Horizon spill, Coastal Operations staff continued working on FEMA Project Worksheets to recover from the 2005 and 2008 hurricane seasons. Staff worked closely with FEMA, GOHSEP and Facility Planning to implement repairs and plan for rebuilding projects.

A new modular office building was purchased and installed at the New Iberia Office in fiscal year 2009-2010. The entire Coastal Operations Section was moved into this office to free up room in main office for the other Coastal and Nongame Resources programs' staff.

Logistical and technical support were given to USFWS to post the boundary of Shell Keys NWR. This refuge is directly south of Marsh Island Refuge and has sensitive oyster concerns to manage. This refuge is a popular loafing location for many waterbirds.

Waterfowl season success for the 2009-2010 season was down compared to 2008-2009. During the 2009 teal season, an estimated 888 hunters interviewed over four sample dates harvested an estimated 0.9 teal per hunter effort. This success rate is down 40 percent from 2008, but efforts were up nearly 45 percent. The increase in attempts is likely due to low turn out in 2008 due to the active hurricane season. Regular waterfowl season success on selected bag check dates was 1.6 ducks per hunter effort. This is down 30 percent from the 2008-2009 season. Hunter participation fell 22 percent compared to the previous season to 5,522 attempts. Totals for other game harvested during the selected bag check dates were 4,565 coots, 805 gallinule, 35 rail, 20 mergansers, 10 snow geese and five white-fronted geese.

Surveys of waterfowl hunters using coastal WMAs displayed that 82 percent of users were opposed to commercial guided waterfowl hunting on coastal WMAs. When asked if they would support the implementation of limited access areas (areas that prohibit the use of internal combustion engines), 74 percent of hunters supported the measure.

Deer season this year was demonstrated by self-clearing permits to have had 3,599 hunting attempts. This resulted in the harvest of 186 deer for a success of one deer per 19.3 attempts. Nearly 94 percent of all deer hunting attempts were conducted at Atchafalaya Delta WMA which also harvested nearly 88 percent of the reported deer.



Trapping agreements were revised for alligator and nutria seasons for both commercial and recreational lottery hunters. The results for the 2009-2010 harvest for all WMAs except Biloxi WMA was the collection of 575 alligators by commercial hunters of their allotted 1,232 tags. Recreational hunters harvested 78 alligators of their 120 tags. This poor success is a reflection of poor market prices. Several hunters chose not to fill many tags once the price was known. Permitted commercial trappers also harvested 19,450 nutria off coastal WMA properties in accordance with CNCP rules and regulations.

Coastal Operations staff continued the various duck banding projects during fiscal year 2009-2010 as part of LDWF's ongoing survival and movement studies. Banding was conducted at Atchafalaya Delta, Pass-a-Loutre, Pointe-aux-Chenes and Salvador WMAs, and Marsh Island Refuge. This year, 355 mottled ducks, 14 wood ducks and six black-bellied whistling ducks were banded, in addition to 38 mourning doves.

ATCHAFALAYA DELTA WMA

Area biologist – Cassidy Lejeune

Technician Supervisor – David LeBlanc

Atchafalaya Delta WMA is the largest WMA in the state at 137,000 acres and is located in southern St. Mary Parish. The WMA is owned by the state and has been managed by LDWF since 1977 under a lease agreement with the Louisiana State Lands Office. The habitat is dominated by fresh tidal marshes and extensive shallow water flats. This WMA enjoys a diverse range of ecotypes from broad upland ridge habitat to mangrove brackish habitat.

Staff continues to work closely with USACE on navigation projects on the WMA. During fiscal year 2009-2010, dredge material was used to increase the size of Mistrot, T-Pat and West Bird islands. Mistrot Island was increased in size by 5,160 feet with the addition of 705,700 cubic yards of material. In addition, five 100-foot tidal cuts were made in the island. The contractor for the project was Weeks Marine.

Research continues to be a priority on the WMA.

Research projects ongoing this year included:

- Dr. Ray Bauer (UL-Lafayette) river shrimp (*Macrobrachium ohione*) to study migration patterns and life cycle of the species. Coastal Operations staff were the primary data collectors by collecting bi-weekly specimen samples and supporting data such as water salinity and temperature.
- Dr. Bruce Davis (LSU Department of Renewable Natural Resources) radio telemetry of hen mottled ducks. This project was to measure survival, habitat use and movement of female mottled ducks.
- Dr. Guerry Holm (LSU School of Coast and Environment) collected data for research of sediment evaluation and plant community change of the Main Delta.
- LDWF continued with the collection of avian influenza surveillance specimens in order to detect the presence of the disease in various species of waterfowl.

- John Shaw and two research assistants (UT at Austin) conducted research on three dimensional evolutions of bars, channels and bifurcations at the delta front of the Wax Delta.

Several improvements were made on the WMA during fiscal year 2009-2010 by the mobile heavy equipment crew. The first project was repairing the Wax Delta campground. Work for this project included dredging material from the adjacent channel to repair the eroded bank line. No wake zone signs were installed along with a self-clearing permit station.

The cul-de-sac was dredged to the Big Island to improve public access. Material dredged was side cast for marsh creation and nourishment. Other improvements on the WMA include pulling debris from the houseboat mooring locations, and repairs and improvements in the levee system on the restricted area.

Oil and gas exploration continues to grow. Fiscal year 2009-2010 activities included:

- Tri-C drilled a new well on the west side of Wax Delta. They used a small hydraulic dredge to dig access and beneficially used the dredged material in a nearby site.
- Phoenix Exploration also drilled two wells on the southeast side of the Wax Delta.
- Phoenix Exploration planned to install new flow lines to the new wells.
- Rooster Petroleum attempted some unauthorized dredging and plug and abandonment activities that were postponed until after waterfowl season.
- Staff coordinated with Minerals Management Section to create a right-of-way for an upcoming 3-D seismic project.

Boundaries of the WMA were maintained and had to be replaced on the northern boundary.

Winter plover surveys were conducted again, and observers noted nine piping plovers and several semi-palmated plovers, sanderlings, dunlin, western sandpipers, killdeer, ruddy turnstones and others.

Mottled duck banding continued with the banding of 96 new ducks and reporting of two recaptured birds from previous years.

Teal season resulted in an average hunter success of one bird per hunter effort. This is approximately 30 percent lower than the 2008 season and 40 percent lower than the previous eight-year average. Waterfowl season success also fell 30 percent this year to 1.7 ducks per hunter effort as compared to the previous season. During the 13 bag checks performed this year, an estimated 2,845 harvested 4,720 ducks.

According to self-clearing permits, 3,375 archery efforts were expended this year harvesting 163 deer. This equates to a success rate of one deer per 20.7 efforts. This is the highest recorded hunter participation for Coastal and Nongame Resources WMAs.



Youth hunt participants for lottery deer hunt.



Youth hunter with doe and buck harvested on 10/25/09.



Youth hunters at Wax Delta during youth weekend in November 2009.

Alligator season resulted in the harvest of 234 alligators. The commercial hunters harvested their full quota of 210 alligators, and the 10 recreational hunters harvested 24 of their allowed 30. Permitted trappers also harvested 13,364 nutria.

Twenty-nine youth hunters participated in the two lottery hunts (58 efforts). The four days of hunting yielded the harvest of five deer (three doe and two bucks) for a success of one deer per 11.6 efforts.

Between the months of July and February it was noted that 22,546 recreational users visited the WMA, and rain-



Wax Delta Campground repairs in August 2009.



13 point buck kill during bow season at Atchafalaya Delta WMA during October 2009.

fall for the period was 49.8 inches. Additional data is not available at the time of this report due to the BP Deepwater Horizon oil spill.

BILOXI WMA

Area Biologist – Shane Granier
 Technician Supervisor – Clint Dauphinet

Biloxi WMA is owned by the Biloxi Marsh Land Co. and has been managed by LDWF since 1957. This 39,600-acre WMA is located in St. Bernard Parish and dominated by brackish oyster grass and juncus. Along its southern boundary is Bayou Loutre, which was the historic path of the Mississippi River. This WMA has very diverse habitat from low saline marshes in the northeast to freshwater ridges in the south. The Mississippi River Gulf Outlet was recently plugged by USACE just south of the WMA, which has significantly decreased salinity along the southern boundary in greatly increased submerged aquatic vegetation on this WMA.

Tropical Storm Ida flooded the WMA with extremely high waters which resulted in deposition of unnatural

debris on the WMA including a large storage tank adjacent to the boundary. A commercial fishing vessel was also stranded on the WMA. A commercial salvage operation illegally propeller washed access to the vessel which resulted in significant marsh damage. This report was turned over to LDNR.

Geotechnical soil core samples were collected during fiscal year 2009-2010 in anticipation of a shoreline protection project that is to be created along the boundary of the WMA on Lake Borne. The project is a Louisiana Coastal Resources Protection shoreline protection project.

Coastal Operations staff is coordinating with the landowner (Biloxi Marsh Land) on renewal of the lease and negotiating oyster harvest concerns.

Natural resources damage assessment helicopter secretive marsh bird surveys in association with the BP Deepwater Horizon oil spill were conducted across the WMA. Many target species were noted along with a group of feral hogs utilizing the southern boarder of the WMA adjacent to Bayou Loutre.

Waterfowl hunting was generally very good this year and estimated to have an average success of 3.5 ducks per hunter effort.

ISLE DERNIERES BARRIER ISLAND REFUGE

Area Biologist – Cassidy Lejeune

Technician Supervisor – David LeBlanc

This refuge is a series of barrier islands in Terrebonne Parish made up by Raccoon, Whiskey, Trinity, East and Wine islands. This refuge has been managed by LDWF since 1992, and ownership of the islands was transferred to the department in 2000. The refuge is saline marsh/dune habitat and home to the largest colonial waterbird colony in Louisiana (Raccoon Island).

The construction of the Whiskey Island Back Barrier Marsh Creation CWPPRA project (TE-50) was completed this year. This project created approximately 300 acres of marsh, 13,000 feet of sand fencing, gulf facing dune construction, and vegetative seeding and planting.

Coastal Operations staff assisted with the UL Lafayette led research project of banding and collecting blood from pelicans on the island. Since 2007, 1,500 hatch year pelicans have been banded on the islands.

Scott Walters (UL Lafayette Biology Department) completed his field research of the effects of hurricanes and sea level rise on the ecology and restoration of the brown pelican. His research included a translocation project from Raccoon Island to Whiskey Island, habitat assessments, monitoring of nesting colonies, and band surveys.

Dr. Frank Rhower (LSU Renewable Natural Resources) continued their research investigating seabird usage of the refuge.



Photos of the dune creation component of the Whiskey Island Back Barrier Marsh Creation Project in August 2009.



Photo of the completed dune creation component of the Whiskey Island Project in October 2009.

Bird nesting signs were posted on the islands to warn visitors of nesting activities.

A U.S. House Agriculture Committee visit of the islands was attended by Vice Chairman Tim Holden. The visit was coordinated by NRCS to visit coastal Louisiana. The visit included a landing on Whiskey Island to talk about the Raccoon Island breakwater project.

Several sediment fences were constructed on Trinity and East islands as part of the Office of Coastal Protection and Restoration's Barrier Island Maintenance Program.

Coastal Operations staff continued to be heavily involved in the development of the Louisiana Coastal Area Terrebonne Basin project which is planning a very extensive barrier island restoration project on the refuge.

Several coordination meetings with USACE were also held in order to encourage the use of dredge materials from the Houma Navigation Channel on Wine Island.

Summer shorebird surveys were conducted with assistance from graduate students from LSU and Nicholls State University. A variety of shorebirds were observed including snowy, Wilson's and piping plovers.

The BP Deepwater Horizon oil spill had significant impacts to this refuge on East, Trinity, Whiskey and Raccoon islands. Many oiled birds, including hatch year pelicans, were oiled and rescued or recovered from the islands. Significant impacts to young on the nest were noted. Sea booms were deployed on all the islands, but similar to other locations, failed to prevent oil impacts to the island. A bagasse treatment was applied to the oil soon after impact to minimize spreading of the oil on young birds.

LAKE BOEUF WMA

Area Biologist – Shane Granier
Technician Supervisor – Mark Castille

Lake Boeuf WMA is 802 acres and located in Lafourche Parish just south of Lake Boeuf. This WMA is dominated by cypress tupelo swamp and has an extensive freshwater marsh dominated by bull tongue and maiden cane.

Coastal Operations staff mowed the ridge and trimmed woody growth in preparation for hunting season twice during fiscal year 2009-2010.

Self-clearing permits revealed that 23 hunters attempted to harvest deer without success. Poor alligator prices resulted in no alligator harvest on the WMA. There was also no nutria harvest.

LOCAP pipeline maintained their right-of-way once during fiscal year 2009-2010.

MARSH ISLAND REFUGE

Area Biologist - Cassidy Lejeune
Technician Supervisor – David LeBlanc

Marsh Island Refuge is a 76,664-acre refuge located in southern Iberia Parish. The refuge was donated to the state in 1920, making it one of the oldest and largest refuges in the state. The refuge was donated to the department by the Russell Sage Foundation which was established by Margaret Olivia Sage in honor of her late husband. The donation came with a strict set of management stipulations which are audited annually by the Russell Sage Foundation Committee.

Replacement/consolidation plans have been made to replace the refuge boat shed and headquarters. The functions of several buildings have been consolidated to one building to serve as both the headquarters and boat shed. LDWF has submitted this plan to FEMA for consideration. We are awaiting a final decision so that we can solicit an architect to prepare final building designs. FEMA, GOHSEP and Facility Planning have visited the refuge many times this year.

Significant repairs were made to the airboat shed to make it functional and safe for the continued purpose of storing airboats. There will be interim repairs until final replacement by FEMA.

Staff repaired various weirs and water control structures on the refuge this year including replacing boards on the boardwalk of the Belly Dam and Gordy Dam.

Staff mowed and reshaped the Big Impoundment Levee in order to facilitate repairs to the levee and make future maintenance and monitoring easier. Repairs to the levee were also completed.

The East Marsh Island Marsh Creation CWPPRA project (TV-21) was initiated during fiscal year 2009-2010. This project was designed to restore and nourish brackish/intermediate marsh on the northeastern tip of Marsh Island. The initial project was to only create or enhance marsh in a 365-acre area, however additional funding was provided to more than triple the project site. Weeks Marine was contracted to construct the project.

Approximately 8,000 oyster grass plugs were planted on the southeast side of the refuge as part of the LDAF/NRCS vegetative planting program.

The BP Deepwater Horizon oil spill hit Marsh Island refuge. Several birds were rescued and recovered on the refuge. Tarballs and tar patties were found on the southern perimeter of the refuge, most notable along the southwest border. Booms were deployed across all the entrances of the refuge in order to prevent oil from penetrating deep onto the island. A quarters barge and equipment storage barge were stationed on the refuge for response activities.

The mottled duck banding project was continued with the banding of 69 new ducks and reporting of eight recaptured birds from previous years.



Inmates planting oyster grass in deteriorated marsh adjacent to W. Branch Oyster Bayou in July 2009.



Approximately 4,900 acres were burned during high water conditions as part of the refuge's prescribed burn program. This burn was in the vicinity of Joe Aucoin Bayou, Big Impoundment, East of Big Impoundment, behind the Big Dam, and along the northern bayshore. Burns are performed to provide ideal foraging habitat for wintering geese and remove excess vegetative litter to improve nesting habitat for mottled ducks.

Maintenance of water control structures and drawdowns of management units were performed according to management plans and goals to create ideal habitat for wintering waterfowl.

The boundary of the refuge was reposted and maintained many times during fiscal year 2009-2010. The rocks along the bayshore of Lake Tom and the Bird Island jetties were also posted with "Rock" warning signs.

Research projects ongoing this year include:

- Dr. Bruce Davis (LSU School of Renewable Resources) mottled duck survival, habitat use and movement of female mottled ducks. As part of this project VHF radios were implanted in 40 hen mottled ducks and tracked for up to 14 months.
- LDWF staff collected avian influenza samples on mottled ducks as part of the USGS avian influenza detection project.

Between the months of July through February recreational use of the refuge was estimated at 17,450. Rainfall totals for this period was 52.6 inches. The missing data is not available at the time of this report due to the BP Deepwater Horizon oil spill

PASS-A-LOUTRE WMA

Area Biologist – Shane Granier
 Technician Supervisor – Clint Dauphinet

Pass-a-Loutre WMA, consisting of 15,000 acres, was established in 1921 by an act of State Legislature. It was designated as a "state shooting ground" which was the precursor to today's WMAs. It is Louisiana's oldest WMA and one of the first in the country. Pass-a-Loutre WMA



Staff repairing water control structure at Marsh Island Refuge in January 2010.



East Marsh Island Marsh Creation Project being initiated during 2009-2010.

was Governor John Parker's response to public outcry that the best hunting areas were all being leased by wealthy hunters, and that the common man did not have quality hunting opportunities. The WMA is dominated by freshwater Roseau cane marsh and fringed by a brackish community. The WMA lies within the Mississippi River Delta in Plaquemines Parish.

The reconstruction of the headquarters was completed this year. The new headquarters blueprints were based exactly on the old headquarters and only changed due to changes in building codes and fire marshal directives. The only building that still existed after Hurricane Katrina was the workshop that has now been renovated, lifted and converted into a laboratory.

Coastal Operations constructed the following facilities at the headquarters:

- boat dock and walkway below the generator shed
- dock extension below boat shed
- cistern platform for generator shed
- wood rack and pipe rack
- dog kennels
- headquarters permit/check in station
- boardwalk to headquarters
- flooring/platform in airboat shed
- installed power to the airboat shed and under the generator shed and tug boat plug
- installed lights on front dock.
- worked with Dune Energy to install a new gas line from the entrance canal to the headquarters.

The mobile heavy equipment crew worked briefly on the WMA this year. They assisted with driving pilings at Loomis #1 campground, leveling the Loomis #1 campground and headquarters grounds from hurricane damage.

Entergy replaced the power lines on the WMA between the headquarters and Port Eads. This operation utilized heavy lift helicopters, marsh buggies and airboats.

Tropical Storm Ida inundated the WMA with an additional 18 inches of water above high tide. Impacts to habitat and facilities were negligible, but a large portion of the headquarters island was covered in vegetative debris that had to be manually removed.

LDWF coordinated with BEAN Dredging to plant a final round of 1,200 cypress and oak seedlings throughout the WMA to complete the mitigation agreement between LDWF and BEAN for missing target elevations in the reservoir marsh creation project.

Oil and gas exploration continues to be very active on the WMA. Projects underway this year included:

- wireline work on several Apache, Forest and Dune Energy production wells.
- inspection and maintenance of various pipeline rights-of-way.
- Forest Oil submitted a permit request to drill a new well. LDWF staff conducted a site visit for planning purposes.
- met with Dune Energy on plans to drill two new wells just off Dennis Pass.

A USCG Administrative Order 001-09 was issued to Dune Energy notifying them that they have been designated as the "responsible party" for the "mystery oil spill" located just off Dennis Pass. Dune now has to propose a remediation plan to USCG to clean the site. This release has been ongoing since Hurricane Katrina.

Coastal Operations staff continues to meet with LDNR and other agencies to encourage USACE to change dredge practices on the Lower Mississippi River. Goals of the department are to cease spoil disposal in Pass-a-



Coastal Operations staff replacing boardwalk to the new headquarters.



Completed new headquarters opened officially on April 29, 2010.

Loutre and encourage beneficial use of all dredged materials. LDNR has denied consistency to the USACE, but they continue to use Pass-a-Loutre as a disposal location.

Staff met with USACE on plans to dredge South Pass. Plans are to create marsh on the east side of the pass in the southern cell of the reservoir and in Garden Island Bay.

Research projects on the WMA include:

- Sara Laporte (UL Lafayette) river shrimp parasite research.
- Dr. Ray Bauer (UL Lafayette) research on river shrimp migration patterns and life cycle. LDWF staff is trapping samples for him and recording temperature and salinity.
- LDWF tagging and monitoring of white-tailed deer.
- LDWF collection of blood from feral hogs to monitor for the presence of various viruses and parasites.
- LDWF collection of avian influenza samples for a USGS led influenza monitoring project.

Pass-a-Loutre WMA was the closest land mass to the BP Deepwater Horizon oil spill at approximately 38 miles. As expected, this WMA was the heaviest impacted land mass in the Gulf of Mexico. Oil made landfall here first and was observed to hit multiple times each month in May, June and July 2010. Approximately 80 percent of the perimeter of the WMA experienced impacts from this oil spill. Many birds were captured here and transported to rehabilitation or collected dead and recorded as evidence.

Several field headquarters were established on the WMA to service lower Plaquemines Parish. Five house boats and storage barges were staged at our headquarters on Dennis Pass. Living quarters and storage barges were also set up in South Pass, Southeast Pass, near the mouth of Pass-a-Loutre, and in Pass-a-Loutre near the convergence of Southeast Pass. The USFWS set up three houseboats at the headquarters and this became their largest base of operations for wildlife rescue in the Gulf of Mexico. From this field camp they covered all of lower Plaquemines Parish from Empire to the Mississippi River Gulf Outlet. The first live oiled sea turtles were captured by state response teams on the crewboat *Canvasback* running out of Pass-a-Loutre. Oiled pelagic seabirds were also collected from sea bound ships and oil rigs by teams running out from the WMA.

The headquarters became an active heliport for clean up crews, SCAT teams, media crews, operations and dignitaries from across the country. Governor Jindal visited the WMA three times. State politicians, local politicians, Presidential cabinet members and Congressmen and Senators from Washington D.C. frequented the area as well. By all measures Pass-a-Loutre WMA was the "bull's eye" of the oil spill. Impact from the oil spill will remain for several years on the WMA, and it is expected that clean up will extend well into the summer of 2011.

According to self-clearing permits, 40 attempts were made to harvest seven deer for a success of one deer per

5.7 attempts. Feral hog hunters expended 160 attempts and harvested 123 hogs for a success of one hog per 1.3 attempts.

Four bag checks were performed during teal season and it was observed that an estimated 34 hunters harvested 48 teal for a success of 1.4 teal per hunter success. This effort is an increase of 120 percent from the previous year and hunter success also climbed 60 percent from the previous year. These significant increases are due to the poor turn out during the 2008 hurricane season.

During the regular waterfowl season, 14 bag checks were conducted and recorded and estimate of 435 hunters who's success was 2.1 ducks per hunter effort. This success is down 42 percent from the previous year, and effort was down 37 percent. Also harvested this year during the bag check dates were 20 coots.

Poor prices on alligators led to a significant decline in harvest this year. Of the 345 tags issued to area hunters only 69 were filled by commercial trappers. However, 3,180 nutria were harvested on the WMA as well.

Between the months of July and February estimated recreational use was 23,900 users, number of campground use days was 992 users, and total rainfall was 34.7 inches. Data for the rest of the year was not available at the time of this report due to the Deepwater Horizon Oil Spill.

POINTE-AUX-CHENES WMA

Area Biologist – Shane Granier

Technician Supervisor – Mark Castille

Pointe-aux-Chenes WMA is 33,488 acres and located in southern Terrebonne and Lafourche parishes. It was purchased from the Exxon Company in 1968 at a cost of \$21 per acre and marked the first purchase of marsh land by the Wildlife and Fisheries Commission. The habitat of this WMA is primarily brackish and intermediate marsh dominated by oyster and wire grass. Point Farm is a 1,000-acre bottomland hard wood ridge that is also located on the WMA

GOHSEP, FEMA and Facility Planning visited the headquarters many times this year to discuss repair of the buildings and structures on the WMA. The department is pushing for timely repairs, but the project continues to be delayed. LDWF submitted program narratives and requested documentation as requested.

Major repairs completed this year included:

- Demolished the boat storage shed.
- Replacement of a five-ton A/C unit at the headquarters.
- Installation of mud room on the first floor of the headquarters.
- Installation of the new 8-inch yard pump at the headquarters.
- Drainage ditches at the headquarters were cleaned out.
- Replaced the dock in and around the St. Louis Canal boat shed.

In July 2010 a fugitive hid on Point Farm after shooting a Terrebonne Parish sheriff's deputy. A 10-hour man hunt ensued involving police dogs and several helicopters. He was eventually found, apprehended and taken into custody.

Oil and gas exploration remains active on the WMA:

- Tellus Oil continues to operate two wells on the WMA and experienced two brine releases.
- Tellus Oil had a work-over rig on Exxon Road to service one of its wells.
- Conoco Phillips inspected their pipeline right-of-way.
- Manti Operating Co. drilled a successful new well in Grand Bayou. They also applied for a permit to produce the well.
- Baby Oil experienced two releases on the WMA

Coastal Operations staff worked extensively with the Terrebonne Parish Levee District and the parishes on hurricane protection projects such as Morganza to the Gulf hurricane levee project, repairs to the 4-1 levee, repairs to the Grand Bayou levee, repairs to the Montegut levee, and development of mitigation projects on the WMA.

Approximately 90 percent of the boundary was reposted and maintained this year.

Research projects on the WMA include:

- Los Alamos lightning detection equipment to predict approaching hurricane strength.

Staff worked closely with DU and USFWS to develop the Grand Bayou enhancement project and submitted it for NAWCA funding. This project would enhance the Grand Bayou #1 levee system, replace the water control structure on the St. Louis Canal, and add a third new structure on the northeast corner of the project to introduce fresh water to the project area.

The mottled duck banding project continued with the banding of 209 new mottled ducks and one wood duck, as well as 38 mourning doves.

Ten deer food plots were planted on Point Farm with iron and clay peas. This project is done to enhance browse availability for deer and to act as an attractant for the youth deer hunt and archery hunters.

Staff maintained water control structures and manipulated management units across the WMA to encourage the growth of preferred waterfowl habitat for the fall migration.

Area staff spent a significant amount of time this year helping Pass-a-Loutre staff prepare for the opening of the new facility. They also assisted in many locations with the BP Deepwater Horizon oil spill.

The BP Deepwater Horizon spill put sheens and small amounts of oil on the WMA, primarily in Grand Bayou and Wonder Lake. Many oiled birds were recovered on or near the WMA as well. The largest impact of the spill on the WMA was the absence of staff to perform routine



Coastal Operations staff repairing and setting water control structure.



Another happy youngster who helped his father harvest a limit of doves on the Pointe-aux-Chenes dove field.

activities. Staff were dispersed throughout the coast for in excess of four months to assist with the spill response in other areas such as Grand Isle, Hopedale and Pass-a-Loutre WMA.

Staff helped Tab Benoit coordinate a tree planting project through the "Coastal Roots" program. The project included having students from St. Martin School in Metairie, La. plant trees on the farm. Staff cleared debris from behind the dove field and provided transportation from the parking lot to the site where the kids planted approximately 500 cypress and maple trees in a site that was devastated by Hurricanes Gustav and Ike.

The youth lottery deer hunt was a success. Thirty-six hunter efforts were expended over both two-day hunts and resulted in the harvest of one doe.

The Pointe-aux-Chenes dove field was a success again. Staff planted sorgum, brown top millet, Japanese millet

and sunflower for the event. On opening day, 94 hunters harvested 432 birds for a success of 4.6 doves per hunter effort. This field continues to be one of the most successful public fields in the state.

Alligator season was poor due to low market prices. Two hundred tags were issued to the commercial trappers, but only 120 were filled. Ten recreational lottery hunters were issued three tags each and only filled 15 of the 30 tags.

Permitted commercial trappers also harvested 159 nutria from the WMA this year.

During the four bag check dates conducted during teal season, an estimated 320 hunters harvested an estimated 245 teal for a success of 0.8 teal per hunter. This success is down 50 percent from the previous year, but efforts increased by almost 100 percent. This is due in large part to the poor turnout during the 2008 active hurricane season which devastated the area.

The regular waterfowl season demonstrated a success of 1.7 ducks per hunter effort. An estimated 1,566 hunters participated during the 14 dates staff conducted waterfowl bag checks. This success is down 15 percent from the previous year, and participation also fell 30 percent. Also harvested during the 14 check dates were 950 coots, 250 gallinule, 10 mergansers and five rail.

Self-clearing permits demonstrated that 28 efforts were made to hunt deer. Only one of these attempts was successful, harvesting an unknown size buck. This equates to a success of one deer per 28 attempts. Several hunters perused squirrel and rabbit, but statistics are not available for these activities.

Between July and February the estimated recreational use was estimated to be 32,125 users, and total rainfall was 32.4 inches. Totals for the entire year were not available at the time of this report due to the BP Deepwater Horizon oil spill.

SALVADOR/TIMKEN WMA

Area Biologist – Shane Granier

Technician Supervisor – Clint Dauphinet

Salvador WMA is a 35,121-acre WMA located in Southern St. Charles Parish. It was purchased from the Exxon Company in 1968 at a cost of \$21 per acre and marked the first purchase of marsh land by the Wildlife and Fisheries Commission. It was purchased along with its sister WMA, Pointe-aux-Chenes. This WMA is a freshwater marsh dominated by bulltounge and maiden cane. Just to the east of Salvador is the 3,920-acre Timken WMA. It is owned by the Orleans City Park Improvement Association and has been leased to LDWF since 1995. Both of these WMAs are currently the beneficiary of one of the largest restoration projects in the state. The Davis Pond freshwater diversion diverts freshwater from the Mississippi River into the northern portion of Salvador WMA then drains into Lake Cataouatche.

These WMAs are maintained regularly by staff from Pass-a-Loutre WMA.

LDWF is currently working with Facility Planning, GOHSEP and FEMA to prepare plans to repair all buildings on the WMA. An architect (Louis F. Saab with Hoffpalair Studios LLC) was hired to construct repair plans, and we are working closely with them to move all projects to construction. Repairs should begin in fiscal year 2010-2011.

During fiscal year 2009-2010, staff built a temporary enclosed generator platform to provide better housing for the unit until the FEMA repairs can be made.

The entire boundary of the WMA was posted this year.



Coastal Operations staff posting the boundary of the WMA.



Coastal Operations staff managing nest boxes and banding waterfowl.

National Oceanic and Atmospheric Administration visited the WMA to gauge several benchmarks located at the headquarters.

Approximately 100 cypress trees were planted on the south side of the headquarters facility.

USACE created several cuts in the bank of the Cypress Lumber Canal to enhance drainage from the Davis Pond ponding area. This project included removal of vegetation from large portions of the spoil banks on both the north and south sides. Many cuts were protected with "rock" and "warning" signs, which were installed to inform the public of the danger. The results of this project have significantly altered the hydrology of the Cypress Lumber Canal by increasing the velocity.

The BP Deepwater Horizon oil spill did not have a significant impact on the Salvador or Timken WMAs. Staff did use the facilities to conduct pre-impact surveys throughout Barataria Basin. The largest impact to the WMA was the lack of maintenance and monitoring of the area in the four months of inactivity due to oil spill response.

Staff continued to band waterfowl on the WMA, with 13 wood ducks and six black-bellied whistling ducks being banded and released. All data was turned over to Wildlife Division for data management. We experienced 80 percent utilization of all wood duck boxes by black-bellied whistling ducks and no wood ducks.

Self-clearing permits revealed that 133 attempts were made to hunt deer resulting in the harvest of 15 deer for a success of one deer per 8.9 hunts. Of the 15 deer harvested, nine were bucks and six were doe.

Alligator harvest was down as had been the pattern in other WMAs due to low market prices. Commercial trappers harvested 176 alligators of an allotted 456 tags issued. Recreational lottery hunters harvested all 30 of their issued tags. Ten recreational hunters were each issued three tags.

Commercial nutria hunters also harvested 2,747 nutria from the WMA this year.

Teal hunters extended and estimated 89 hunter efforts during the four bag check dates conducted and harvested 0.4 teal per effort. This success is down 71 percent from the previous year while hunter participation remained the same.

During regular waterfowl season and estimated 676 hunters attempted to harvest ducks during the 14 bag checks conducted. Average annual success was 0.7 ducks per hunter attempt. Success and participation were both down approximately 60 percent from the previous year. Also harvested this year during the 14 mandatory checks were 2,800 coots, 300 gallinule and 30 rail.

Between June 2009 and February 2010, recreational use was estimated at 36,450 users. Data for the rest of the

year is not available at the time of this report due to the BP Deepwater Horizon oil spill.

ST. TAMMANY WILDLIFE REFUGE

Area Biologist – Shane Granier
Technician Supervisor – Clint Dauphinet

St. Tammany Refuge is a 1,310-acre refuge located on the North Shore of Lake Ponchartraine in St. Tammany Parish. The refuge was purchased by the state in 1935 from the Great Southern Lumber Co. The refuge is managed in cooperation with the USFWS along with Big Branch National Wildlife Refuge.

No alligators or nutria were harvested on the refuge this year.

STATE WILDLIFE REFUGE

Area Biologist – Cassidy Lejeune
Technician Supervisor – David LeBlanc

State Wildlife Refuge is a 13,000 acre refuge located in Southern Vermillion Parish. It was donated to the state in 1911 by Mr. Edward McIlhenny and Mr. Charles Ward to be managed as a wildlife refuge. This is the oldest refuge in the state and one of the oldest in the country.

LDWF is working closely with FEMA, GOHSEP and Facility Planning to repair and replace all buildings and structures on this refuge. Several field trips to the refuge have been conducted to discuss rebuilding plans. A consolidation plan has been developed on all buildings between this refuge and Marsh Island Refuge and submitted to FEMA. This plan calls for repairs to both boat sheds, all bulkheads and moving funding for the rest to major renovations at Marsh Island. We are waiting their response before moving forward.

Staff from Marsh Island visits this refuge regularly to maintain facilities and conduct routine monitoring and projects.

Staff replaced the board road over the shallow water weir at the headquarters. Plans were made to replace/repair many water control structures on the refuge. Funding sources will sought to make these repairs in fiscal year 2010-2011.

A prescribed burn was conducted over approximately 4,700 acres around Hog Bayou and Lake Portage. Prescribed burns are done to encourage the growth of preferred forage foods for wintering geese and to enhance mottled duck nesting habitat.

Staff spent a significant portion of the FEMA contents claims fund this year to refurbish the trapper's camp and replace equipment lost during Hurricane Rita.

Marsh Island staff monitored for oil impacts at State Wildlife Refuge during the BP Deepwater Horizon oil spill. Although no impacts were observed at the refuge, some habitat and wildlife impacts were observed by

LDWF staff on the adjacent private refuge, Paul J. Rainey Wildlife Sanctuary. Staff assisted with capturing a bird along the gulf shoreline of Paul J. Rainey Sanctuary.

Recreational use for the months of July to February was estimated at 14,850. Data for the rest of the year was unavailable at the time of this report due to the BP Deepwater Horizon oil spill.



Geese foraging in burned marsh near North Lake on Jan. 19, 2010.



Staff burning vegetation at State Wildlife Refuge during the winter of 2009-2010.



OFFICE OF FISHERIES

The Office of Fisheries is comprised of five divisions, Marine Fisheries, Inland Fisheries, Research and Assessment, Louisiana Seafood Promotion and Marketing Board, and Socioeconomic Research and Development.

MARINE FISHERIES DIVISION

The Marine Fisheries Division is charged with management of the full range of Louisiana's estuarine and marine resources. Division responsibilities are categorized as Fisheries Management Programs and Habitat Protection Programs. Participation in numerous local, state, regional, national and international committees, task forces and councils provides professional expertise in the development of state and federal regulation, legislation and standards governing the wise use of renewable natural resources.

INLAND FISHERIES DIVISION

The Inland Fisheries Division manages fish populations and habitats for the conservation and improvement of sport and commercial fishing primarily in freshwater areas of the state. Division responsibilities are divided into two major categories: Fisheries Management and Aquatic Habitat Management.

RESEARCH & ASSESSMENT DIVISION

It is the mission of the Louisiana Department of Wildlife and Fisheries Research and Assessment Division to provide technical and scientific support to the Office of Fisheries as it relates to fisheries management issues; to improve fishing/boating access and opportunity for users to enjoy Louisiana's fishery resources and to promote participation in Louisiana's fisheries through outreach and education.

LOUISIANA SEAFOOD PROMOTION & MARKETING BOARD

The Louisiana Seafood Promotion and Marketing Board was created by the Louisiana Legislature with the purpose of enhancing the public image of commercial fishery products, promoting the consumption of these products and assisting the seafood industry. According to the mission statement, the board assistance is to twofold: product promotion through advertising programs and public image enhancements; and market development by better utilizing existing markets and establishing new market opportunities.

SOCIOECONOMIC RESEARCH & DEVELOPMENT

The Socioeconomic Research and Development Section conducts economic research pertaining to wildlife and fishery resources, provides support to other LDWF programs, and represents LDWF on various study groups, task forces and committees.

OFFICE OF FISHERIES

ABBREVIATIONS

AOO - Access, Opportunity and Outreach

BRD - Bycatch Reduction Device

DIDSON - Dual-frequency Identification Sonar

DMS - Database Management System

EMAP - Environmental Monitoring and Assessment Program

GSMFC - Gulf States Marine Fisheries Commission

LARP - Louisiana Artificial Reef Program

LDOTD - Louisiana Department of Transportation and Development

LDWF - Louisiana Department of Wildlife and Fisheries

LSPMB - Louisiana Seafood Promotion and Marketing Board

LSU - Louisiana State University

LSUCFI - Louisiana State University Coastal Fisheries Institute

MRFSS - Marine Recreational Fishing Statistical Survey

MRGO - Mississippi River Gulf Outlet

MSC - Marine Stewardship Council

NOAA - National Oceanic and Atmospheric Administration

OTC - Oxytetracycline

POLR - Private Oyster Lease Rehabilitation

SARS - Special Artificial Reef Sites

SCPDC - South Central Planning and Development Commission

SEAMAP - Southeast Monitoring and Assessment Program

SFR - Sport Fish Restoration

SRD - Socioeconomic Research and Development

TED - Turtle Excluder Device

USACE - United States Army Corps of Engineers

ENVIRONMENTAL & HABITAT DISASTER RECOVERY

The Office of Fisheries strives to maintain Louisiana's abundant fishery resources and its commercial and recreational opportunities by seeking and efficiently implementing federally funded programs to aid the recreational and commercial fishing industries in recovery from natural and man-made disasters. Since Hurricane Andrew in 1992, Fisheries has received continual federal appropriations to assist the commercial and recreational fishing industries during times of declared disasters and aid these industries in recovery from the devastation. The recovery efforts include repairs to state fish hatcheries, building of artificial reefs, and grant assistance awarded to vital fishing and boating access points.

EMERGENCY DISASTER RELIEF PROGRAM (EDRP) 1

In response to the hurricanes of 2005, Congress authorized its first fishery disaster relief program in June 2006 (Public Law 109-234). On Aug. 25, 2006, the U.S. Department of Commerce announced the issuing of a grant to the Gulf States Marine Fisheries Commission (GSMFC) to aid Louisiana, Mississippi, Alabama, Texas and Florida in rebuilding fisheries. The National Oceanic and Atmospheric Administration (NOAA) granted funds to the GSMFC for further subgrant to the Gulf coast states. Louisiana's subgrant awards are:

- OR-RRR-020-2006-01 entitled Reseeding, Rehabilitating and Restoring Oyster Reefs (Job 1).
- OB-SGR-021-2006-01 entitled Rehabilitating Oyster Bed and Shrimp Grounds (Job 2).
- CR-M-022-2006-01 entitled Cooperative Research to Monitor Recovery of Gulf Fisheries (Job 3).

Following the passage of Hurricanes Katrina and Rita, fishermen from across the coast formed the Louisiana Fishing Communities Rebuilding Coalition and identified funding priorities for the recovery of Louisiana's commercial and recreational fisheries. Priorities, including debris removal, and the evaluation of the status and health of natural resources, are addressed by this congressional appropriation.

AUTHORIZED PURPOSES AND FUNDING CATEGORIES OF PUBLIC LAW 109-234

1. Reseeding, rehabilitating and restoring oyster reefs

- Surveys of public oyster seed grounds and seed reservations, public and private oyster reef rehabili-

tation, including sediment/debris removal and reef building; biological/environmental monitoring on the public grounds.

2. Rehabilitating oyster beds and shrimp grounds

- Documenting and removing underwater obstructions/wet debris; projects to restore marine species access to impounded areas and to demonstrate use of oyster reef to protect shorelines.

3. Cooperative research to monitor recovery of Gulf fisheries

- Monitoring recovery of fishing industries, surveying licensed fishermen, dealers and processors to document and report debris on the fishing grounds; characterize present fishing operations and collect investment costs, operating costs, handling and storage capacity; perceived problems facing the industry, opinions on various management practices and other operation characteristics; recreational fishery surveys.
- Funding for fishery-independent data collections to monitor recovery of Gulf fishery stocks.

Projects were designed to be auditable and accountable, and to include local fishing communities and parishes or other local entities to best use local resources. General planning meetings were held among project staff on a regular and continuing basis throughout the planning and implementation period. Scoping and planning meetings were held with state and federal agencies, and representatives of the fishing industries to identify needs and opportunities.

JOB 1: RESEEDING, REHABILITATION AND RESTORATION OF OYSTER GROUNDS - SUBGRANT OR-RRR-020-2006-01

Private Oyster Lease Rehabilitation (POLR) Program

The POLR program concluded during fiscal year 2009-2010. It was an approximately \$12 million program which provided reimbursement assistance to private leaseholders for the performance of rehabilitation activities on privately leased water bottoms. Rehabilitation activities available to the leaseholder under the POLR program included:

- sediment/debris removal.
- cultch deposition.
- resurveying/remarking of leases.

- relaying of oysters.
- bedding (i.e., transplanting) of oysters.
- replacement of lost/damaged lease records.

The program reimbursed participating leaseholders (contracting parties) for costs associated with rehabilitation activities up to a qualifying amount provided that the leaseholder supplies supporting evidence that documents the rehabilitation activities were performed.

The POLR program followed strict audit and accountability measures, and required that participating leaseholders sign a Cooperative Endeavor Agreement with the Louisiana Department of Wildlife and Fisheries (LDWF). This agreement outlined the terms of the POLR program and the amount of reimbursement the leaseholder qualified to receive (upon the delivery of appropriate supporting documentation). In essence, the leaseholder signed the agreement, traveled to his leases and performed the rehabilitation activities, submitted a reimbursement request along with appropriate supporting documentation, and was reimbursed for his associated costs (certain limits applied, such as daily vessel rates, etc.).

Leaseholders began signing POLR agreements on May 25, 2007 when LDWF held the first of five public meetings with all interested leaseholders. The final public meeting was held in Baton Rouge at the LDWF headquarters on Oct. 18, 2007. At these meetings, interested leaseholders proceeded through three stations in order to:

1. receive general information about the program.
2. check documents showing person has the legal right to sign the agreement for the leaseholder.
3. sign the POLR agreement.

In addition to the five public meetings, LDWF held numerous one-on-one interviews with participating leaseholders for the purpose of signing POLR agreements. Jan. 18, 2008 was the final deadline for a leaseholder to sign the POLR Cooperative Endeavor Agreement.

The POLR program included approximately 580 oyster leaseholders participating and over \$10.8 million in reimbursement assistance claims paid to participating leaseholders during the term of the program for documented rehabilitation work including the following totals for each reimbursable activity (*Table 1*).

TABLE 1. POLR reimbursements by activity.

ACTIVITY	FY 2008-2009
Sediment/Debris Removal	\$4,373,273.15
Cultch Deposition	\$1,256,757.71
Remarking/Resurveying	\$525,887.04
Relaying Oysters	\$377,307.22
Bedding Oysters	\$4,340,654.25
Replacement of Lost/Damaged LDWF Lease Documents	\$11,861.00
Total Reimbursement	\$10,885,740.37

The POLR program was monitored both in the office and in the field. LDWF utilized a staff of four working directly on this program in the office, with additional staff performing administrative and field-monitoring duties. LDWF Fisheries field staff members were trained to assist with and to perform random field inspections of POLR-related rehabilitation activities. Office staff collected call-in reports from the toll-free call center, determined where rehabilitation work would be occurring, and distributed such information electronically to field staff for field monitoring purposes. Field staff performed monitoring with assistance from office staff when needed. On dedicated field monitoring days, field staff would perform field inspections with the main goal of monitoring and documenting POLR activities. During non-dedicated field work, field staff would document POLR activities when a POLR vessel was encountered during the normal course of field work. During the entirety of the program, approximately 33 percent of all POLR work days reported to the toll-free call center by POLR participants was monitored in the field by LDWF staff.

Native Stock Oyster Hatchery

Although federal funding for this aspect has been reprogrammed, plans continue to be developed to incorporate a native oyster hatchery at the new LDWF Fisheries Research Lab on Grand Isle, La. The construction of this laboratory was completed during fiscal year 2008-2009, and space was allocated for a native stock oyster hatchery. LDWF has received input on hatchery design from researchers, including Louisiana State University (LSU) oyster hatchery researchers. Necessary hatchery equipment was planned to be purchased using other funding sources, and the hatchery was scheduled to be in full working order by spring 2010. The BP Deepwater Horizon oil spill delayed work toward this end, and alternative hatchery plans are now being considered with input from LSU oyster hatchery researchers.

Oyster Lease Data and Records Management

A list of scanners was received from Aero-Metric. The scanner specs were sent to the Louisiana Division of Administration to be sent out for bid. Aero-Metric has been working on importing the existing database and creating a Web interface for future data input.

Public Oyster Resource Reseeding, Rehabilitation and Restoration

Side Scan Sonar Surveys of Public Oyster Grounds

No activity during fiscal year 2009-2010 utilizing disaster recovery monies.

Cultch Placement on Public Oyster Grounds

No activity during fiscal year 2009-2010 utilizing disaster recovery monies.

Biological Monitoring of Existing Cultch Plants

Biological monitoring of federally funded cultch planting projects continued during fiscal year 2009-2010, and July 2010 quantitative sampling indicated that the cultch plants were successful in producing harvestable quantities of

oysters. Biological sampling on cultch plants constructed in May 2009 showed that these new oyster reefs held between 89.9 and 998.2 barrels of oysters per acre (one barrel equals two sacks). Similar sampling on cultch plants constructed in May 2007 and 2008 showed less available oysters, however these cultch plants had previously been opened to commercial oyster harvest.

JOB 2: REHABILITATING OYSTER BED AND SHRIMP GROUNDS - SUBGRANT OB-SGR-021-2006-01

Debris Removal

LDWF has continued work on the removal of marine debris in state waters under a contract awarded to Crowder-Gulf Joint Venture, Inc. The original contract was structured whereby the contractor is assigned side scan sonar survey and debris removal within individual grids measuring four-square miles for a fixed price of \$37,100 per grid. This contract has been amended whereby the contractor is assigned side scan sonar surveys of selective grids for a fixed price of \$14,500 per grid and debris removal in selective grids for a fixed price of \$23,600. This approach has resulted in cost savings as the costs of debris removal within surveyed grids containing relatively few or particularly small targets may be avoided allowing LDWF greater flexibility in assigning debris removal in selective grids containing high target densities. The contractor uses side scan sonar equipment to survey all water bottoms within each assigned grid to identify the location of debris contacts (waters less than 3 feet in depth are not surveyed due to sonar's limited effectiveness in shallow waters). Contractor is required to utilize Louisiana resident licensed vessels and crews comprised of Louisiana resident fishermen and charter boat operators to retrieve debris. Marine debris removal work began in July 2007 within portions of Lake Borgne, followed by clean ups within portions of Lake Pontchartrain (Middle Ground), Lake St. Catherine, Calcasieu Lake, Vermilion and Cote Blanche bays, and Barataria and Caminada bays north of Grand Isle. Through June 2010, approximately 440 square miles of the state's shrimp fishing grounds have been cleared of debris at a cost of \$4.081 million. In January 2010, LDWF assigned the contractor with side scan sonar survey of 30 grids located in the southeastern portion of Lake Pontchartrain. Based upon review of the side scan sonar survey data, the contractor was assigned debris removal in 27 of these 30 grids and the work is ongoing.

Coastal Habitat Rehabilitation and Enhancement Use of Bio-Engineered Reefs for Shore Protection in Coastal Louisiana: Evaluation of Shore Protection and Ecosystem Trade-offs (contracted to LSU AgCenter)
This project compares the effectiveness, sustainability and ecosystem effects of bio-engineered oyster reefs for shoreline protection along eroding medium and low-energy sheltered shorelines. Shell oyster reefs were created in Caillou Lake (Sister Lake) in the Terrebonne Basin. The experimental design consists of different reef configurations in medium- and low-energy sites along the lake shore. In addition, off-bottom oyster racks are also

deployed. Data measuring oyster growth rate, cumulative mortality, incidence of *Perkinsus marinus* and MSX infections, oyster condition, spat recruitment and settlement, nekton biomass, relative shoreline position, vegetation, soil percent organic matter, and chlorophyll are collected at these sites. The goal is to evaluate the effectiveness of bio-engineered reefs as shoreline protection measures.

Evaluating the Effect of Marsh Management Structures on Nekton Utilization of Salt Marshes: A Novel Approach Using DIDSON Acoustic Imaging Technology (contracted to LSU AgCenter)

This project examines the effects of water control structures on nekton movement using dual-frequency identification sonar (DIDSON) acoustic imaging technology. The project is specifically investigating the role of tide stage, diel periodicity and season on fine scale temporal and spatial patterns of movement of nekton movement through water control structures in salt marshes. The project has examined a site in Hopedale, La., and several sites on Calcasieu Lake. The goal is to enhance the understanding of how fish move through these water control structures in the hopes that the findings may lead to development of structures that allow for greater movement.

LDWF Marine Fisheries Data Management System Improvements

The Office of Fisheries is responsible for the identification, administration and management of state fisheries. To accomplish these tasks, the Office of Fisheries released a Request for Proposals for Database Management System (DMS) Design and Implementation to replace its aging DMS. A pre-proposal conference was held on Aug. 3, 2009 to introduce potential bidders to the existing DMS, the databases in production, and to discuss the functionality required in the new DMS. All subsequent bids from were reviewed by committee in October 2009 and Modulant, Inc. was selected. Contract negotiations with Modulant, Inc. were completed, and the final contract was signed on April 1, 2010. Work is scheduled to begin in August 2010 and be completed by June 2011.

JOB 3: COOPERATIVE RESEARCH TO MONITOR RECOVERY OF GULF FISHERIES - SUBGRANT CR-M-022-2006-01

Survey Commercial Shrimp, Oyster and Crab Dealers and Processors Monitoring the Recovery of Commercial Fisheries Using Trip Ticket Data.

During this period, Fisheries staff compiled trip ticket information in table format from 2000 through 2007 and presented some of the results at the following professional meeting. A poster was presented at CNREP 2010 conference (Challenges of Natural Resource Economics & Policy: The Third National Forum on Socioeconomic Research in Coastal Systems) in New Orleans, La., on May 26-28, 2010. The title of the poster was "Coastal Louisiana Parishes: Trends and Signs of Recovery in Shrimp Industry from Hurricane Katrina and Rita in 2005." A slide presentation was presented at the American Fisheries

Society meetings held Jan. 28-29, 2010 in Baton Rouge, La. The title of the presentation was "Louisiana Shrimp Dealer Participation Trends 2000-2007: A Comparative Analysis Pre- and Post-Hurricanes Katrina and Rita Louisiana Shrimp Industry: Trends from 2000-2007."

Fishery-Independent Monitoring of the Gulf Fishery Stocks

LDWF contracted with the University of New Orleans to collect and enter fishery-independent data within the Lake Pontchartrain system. Sampling is conducted using standard LDWF protocols at six stations located throughout Lake Pontchartrain and include sampling for both finfish and crustaceans. These data are being used by LDWF to evaluate and manage the recovery of the estuarine fisheries following Hurricanes Katrina and Rita. These data are also being used to establish a new "baseline" to further assess any changes within this important area. During the reporting period, data were utilized to assess the impacts of the Bonnet Carre' Spillway opening in 2008.

SALT Recreational For-hire Industry Survey

This survey was administered to 591 holders of a 2008 Louisiana Resident Charter Captain License. The survey was designed to collect vital data on the effects of Hurricanes Katrina and Rita and on the current status of Louisiana's charter industry, as well as provide a method of distributing funds appropriated for charter industry relief. Data compiled from the survey provides a better understanding of the industry's status at the time of collection, what it needed to survive, the short- and long-term impacts of the 2005 hurricanes, as well as other factors affecting the industry.

- LDWF reviewed a proposal by the LSU La. Sea Grant office to develop and administer the survey.
- LDWF is currently developing a contract in conjunction with the LSU La. Sea Grant office based on this proposal and the department's needs for this program.
- LDWF staff biologists and economists developed a draft survey instrument to be presented to LSU La. Sea Grant office as a foundation for the survey.
- Approximately \$148,200 of the 2006 Emergency Supplemental funds have been set aside for this project to cover costs of survey development and implementation, as well as cooperative research payments to those charter captains that participate.

Pilot Charter Fleet Trip-level Data Collection

The 2008 Regular Legislative Session enacted R.S.309.H, which required LDWF to develop a voluntary reporting system for the charter industry. LDWF contracted with BlueFin Data to develop a pilot program in the form of an electronic logbook system. This system was demonstrated at the following locations:

- Chalmette High School - Sept. 22, 2009
- Houma Municipal Auditorium - Sept. 23, 2009
- Lafitte Town Hall - Sept. 29, 2009
- LSU AgCenter, Lake Charles - Sept. 30, 2009
- Covington City Council Chambers - Oct. 1, 2009
- LDWF Marine Laboratory - Oct. 6, 2009

- Jefferson Parish Library, Metairie - Oct. 15, 2009
- Slidell Public Library - Nov. 17, 2009

Attendees were given copies of the software and were instructed in its use. Comments from participants were used to further refine the software design.

Cooperative Research Surveys to Monitor Recovery of Gulf Fisheries

LDWF developed a \$15.7 million cooperative research program to monitor the recovery of Louisiana commercial fisheries impacted by Hurricanes Katrina and Rita in 2005, and Gustav and Ike in 2008. Funding for this program came from a \$52.9 million federal fisheries disaster assistance grant from the NOAA (Grant Number NA06NMF4540319) through GSMFC. LDWF will provide compensation to qualified Louisiana resident commercial fishermen and wholesale/retail seafood dealers who submit completed socioeconomic surveys. These surveys were designed by LDWF economists to capture information on the recovery status of the state's commercial fisheries and fishing industries.

In order to be considered eligible to participate in this program, fishermen and dealers must meet one of the following requirements:

- Louisiana resident commercial fishermen who held a valid 2008 Resident Commercial Fisherman's License and had combined trip ticket-reported sales valued at \$5,948 or more during the three-year period, Sept. 1, 2005 - Aug. 31, 2008. All saltwater species landings (shrimp, crab, oyster, menhaden and saltwater finfish) are included in total sales, regardless of the fisherman's parish of residence. Freshwater species landings (freshwater finfish and wild-caught crawfish) are included only if the fisherman resided in any of the 26 LDWF-identified, hurricane-impacted parishes.
- Louisiana resident wholesale/retail seafood dealers who held a valid 2008 Resident Wholesale/Retail Seafood Dealer's License and had combined trip ticket reported purchases valued at \$20,756 or more during the three-year period, Sept. 1, 2005 - Aug. 31, 2008. All saltwater species landings (shrimp, crab, oyster, menhaden and saltwater finfish) are included in total sales, regardless of the wholesale/retail dealer's parish of operation. Freshwater species landings (freshwater finfish and wild-caught crawfish) are included only if the wholesale/retail dealer operation was located in any of the 26 LDWF-identified, hurricane-impacted parishes.

Eligible commercial fishermen and wholesale/retail dealers received information packets during April 2009, which included instructions, application forms and a business-reply envelope. Once required forms were returned, participants received an additional packet containing the Cooperative Research Survey, detailed instructions for completing the survey, and a self-addressed business-reply envelope to be used in returning the completed survey.

Through June 30, the program parameters were developed, the survey instruments created, coordination with South Central Planning and Development Commission (SCPDC) and an external accounting firm was undertaken to assure clear lines of communication and duties were developed, and it was determined that resources were available for all necessary tasks. SCPDC and affiliated planning districts receive and process all information about this cooperative research program. Any questions concerning eligibility, requests for information, etc., were handled by SCPDC via telephone, mail or the website set up for the program at www.scpdc.org/fisheriesassistance.

LDWF hosted a series of public meetings in coastal communities beginning April 21, 2009 to present information about the program and review instructions on participating in and completing cooperative research surveys.

Review of the surveys for completeness by SCPDC, for consistency by LDWF, and payment of surveyed participants began in these months. The deadline for submitting a complete survey has passed except for individuals involved in the reconsideration process. During this period, 2,291 fishermen received payment, and 281 dealers received payment. The total funds disbursed valued \$11,436,789. A summary of payments is included in *Table 2*.

LDWF and its contractor have completed scanning software tests and have begun scanning surveys and processing data. The data is being incorporated into computerized databases.

EDRP2 PROGRAM- ASSISTANCE TO COMMERCIAL AND RECREATIONAL FISHERIES – SUB GRANT ACF-025-2007-02

Congress authorized additional funding (\$41.3 million) under the U.S. Troop Readiness, Veterans' Care, Katrina Recovery and Iraq Accountability Appropriations Act (Public Law 110-28) to provide assistance to the Gulf of Mexico commercial and recreational fishing industries affected by Hurricanes Katrina and Rita. The appropriation to GSMFC for sub-grant to the states was approved in August 2007, and Louisiana received legislative budget authority in December 2007. Under this GSMFC Emergency Disaster Recovery Program (EDRP II), Louisiana's two sub-grant awards were:

- Economic assistance to commercial fishers, charterboat operators, vessel owners and wholesale/retail seafood dealers (total to LDWF Office of Fisheries = \$40 million)
- Domestic product marketing and promotion of Louisiana wild-caught seafood (total to

TABLE 2. Payments made to eligible commercial harvesters, and wholesale/retail seafood dealers that have completed survey.

COOPERATIVE RESEARCH SURVEY PAYMENT SUMMARY					
Batch #	Participants	Fishers	Dealers	Funds Issued	Check Cut Date
1	38	27	11	\$286,966.48	8/31/2009
2	78	62	16	\$415,298.33	9/10/2009
3	67	54	13	\$453,149.08	9/17/2009
4	43	40	3	\$126,211.89	9/23/2009
5	43	39	4	\$161,532.62	9/29/2009
6	39	32	7	\$173,925.92	10/6/2009
7	47	42	5	\$125,023.07	10/9/2009
8	34	31	3	\$164,563.92	10/22/2009
9	59	53	6	\$347,406.07	10/30/2009
10	55	46	9	\$262,746.94	11/9/2009
11	44	37	7	\$277,153.24	11/17/2009
12	42	35	7	\$297,104.84	11/23/2009
13	69	66	3	\$183,057.54	12/1/2009
14	54	51	3	\$170,379.87	12/10/2009
15	126	115	11	\$363,465.27	12/15/2009
16	69	62	7	\$423,331.61	12/28/2009
17	69	63	6	\$267,782.34	1/6/2010
18	65	60	5	\$191,693.13	1/14/2010
19	71	69	2	\$257,869.05	1/20/2010
20	50	44	6	\$256,856.18	2/2/2010
21	83	79	4	\$300,230.27	2/9/2010
22	74	69	5	\$319,712.39	2/19/2010
23	91	88	3	\$342,998.27	3/2/2010
24	44	43	1	\$118,501.97	3/15/2010
25	99	93	6	\$374,194.41	3/21/2010
26	76	72	4	\$246,332.22	3/30/2010
27	111	106	5	\$437,450.88	4/8/2010
28	84	37	47	\$1,070,104.02	4/14/2010
29	79	41	38	\$922,084.44	4/23/2010
30	90	87	3	\$297,294.22	4/28/2010
31	109	106	3	\$284,439.82	5/4/2010
32	72	70	2	\$252,720.76	5/11/2010
33	75	74	1	\$209,971.18	5/18/2010
34	60	59	1	\$149,124.47	5/26/2010
35	70	69	1	\$194,386.71	6/8/2010
36	92	71	21	\$486,070.67	6/16/2010
37	101	99	2	\$226,525.11	6/28/2010
Total	2,572	2,291	281	\$11,436,788.98	
Applicants	3,290	2,985	305		

LDWF, Seafood Promotion and Marketing Board = \$1.3 million).

ASSISTANCE TO COMMERCIAL FISHERIES

LDWF contracted with SCPDC to assist with program administration by identifying and receiving responses from eligible participants who choose to participate in the LDWF economic assistance payment program. LDWF developed and provided eligible Louisiana resident commercial fishermen, commercial fishing vessel license holders, charter boat operators, and wholesale/retail seafood dealers with a notification of eligibility packet. The packet was mailed to 8,111 commercial fishing participants and 721 charter guides. The packets included background information about the program and the funding source, and a unique, individual "Qualification for Economic Assistance Payments and Statement of Certification Form," which identified each specific economic assistance payment component the participant was qualified to receive. This form was to be completed and returned to SCPDC in order to receive assistance payments. This form also included a statement certifying that the applicant has not been found in violation of any turtle excluder device (TED) or bycatch reduction device (BRD) regulation by either federal or state law enforcement agencies if Louisiana trip ticket data indicated landings of trawl-caught shrimp during the qualifying period. Packets also contained additional instructions, information on the allocation of funds between and among the various fishing sectors, and additional forms including a sample "Board Resolution," which was required if the participant was an incorporated business, a "Trip Ticket Report Application Request Form" for use if a participant wanted to request a copy of their personal trip ticket report data, and a federal "Form W-9."

LDWF also entered into contract with Postlethwaite and Netterville, a professional accounting firm, to assist with processing payments and developing federal 1099 forms to qualified participants.

The assistance payment program was developed with strict accountability standards. The following risks were considered in program development, although this list is not intended to include every risk that may have been inherent within the process:

- Disbursing funds to an ineligible individual/entity.
- Disbursing funds to an incorrect individual/entity.
- Fraudulently changing disbursement amount on a payment.
- Inadequate, inconsistent, fraudulent or lack of documentation.
- Disbursement recorded to incorrect category.
- Duplicate line item disbursement.
- Un-auditable controls.
- Loss of documentation.
- Over- or under-payment to individual/entity.

The process addressed disbursements to qualified, eligible individuals/entities:

- resident licensed charter boat guides.
- resident commercial fishermen.
- resident commercial fishing vessel license holders in the shrimp, oyster, saltwater fish and menhaden fisheries.
- resident wholesale/retail seafood dealers.

A multi-user data management system was developed to capture the data related to these disbursements. The system secured connection between offices using an encrypted VPN connection on a server placed in a secure facility to mitigate potential exposure from unsolicited individuals. This accounting system allowed the following:

Payment Processing

1. A user (SCPDC) entered qualification details into the data system from information included in the packets mailed to and returned by potential program participants.
2. Another user (LDWF staff) to review the data entered.
3. Another user (LDWF program staff) to approve the data entered.
4. A user (LDWF staff) to run a report to compile a distribution amount for payment.
5. Another user (LDWF program staff, administration or executive staff) approve the payment, which included payment details (bank account data), and
6. Another user (Disbursing Agent – Postlethwaite & Netterville) with the ability to execute payment by paper check or through an EFT upload to a financial institution.
7. Periodic progress and financial reports were prepared as required, and other management reports were prepared as needed.

SCPDC began certifying qualifying individuals/entities (step 1 in the payment process, above) during May 2008 and disbursement of assistance payments to qualifying commercial fishers, commercial fishing vessel license holders, wholesale/retail seafood dealers and charter boat operators who were active in the fisheries during the qualifying period (September 2004 through August 2005) began in late June. LDWF paid direct assistance to eligible program participants through fiscal year 2009-2010 (*Table 3*).

Program activities were disrupted by the passage of Hurricane Gustav, which crossed the central Louisiana coast on Sept. 1, 2008, followed by Hurricane Ike, which crossed the Texas Coast on Sept. 13, 2008. LDWF headquarters in Baton Rouge was closed Aug. 29 through Sept. 4 for Hurricane Gustav, and again on Sept. 12 for Hurricane Ike. LDWF field offices in coastal parishes were closed, for varying amounts of time depending on location, between Sept. 1-21. All LDWF activities immediately prior to and for several days after storm passages were directed toward support of the state's emergency response plan for search and rescue. All LDWF operational activi-

ties were severely disrupted during September 2008. In addition, the SCPDC office was commandeered by the Terrebonne Parish Office of Emergency Preparedness for use as their emergency response command center during the response to Hurricane Ike; SCPDC POLR staff operated in temporary office space from Sept. 11-29, 2008. Postlethwaite & Netterville's office also was closed during early September 2008 due to the heavy damage inflicted on Baton Rouge by Hurricane Gustav. Following both storms LDWF, in conjunction with GSMFC and NOAA Fisheries, began re-evaluating the scopes of work for EDRP1 projects in light of the continuing needs of Gulf of Mexico fisheries still attempting to recover from the impacts of Hurricanes Katrina, Rita and Wilma in 2005.

All funds originally allocated to the menhaden fishery were disbursed during the first round of payments. The plan for allocation of remaining economic assistance funds for commercial and charter fisheries is summarized in *Table 3*. Disbursements to complete this phase of the project began Jan. 25, 2010; payments made to-date, including first- and second-round payments are summarized in *Table 3*. All payments to qualified participants have been completed. The final payment selection was made April 22, 2010.

As required by Section 115(c) (1) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, 2 percent of the available appropriation was disbursed to fishermen with a demonstrated record of compliance with TED/BRD regulations. LDWF commercial license and trip ticket report files were used to identify shrimp fishers who were subject to TED/BRD regulations (who reported sales of trawl caught shrimp on LDWF trip tickets) in the period between September 2004 and August 2005.

Disbursement of the remainder of funds allocated to TED/BRD compliance continued during this quarter. In order to fully expend the 2 percent of the appropriation as required, the balance of TED/BRD funds (\$227,554) was divided equally as a supplemental payment among the 1,132 participants who have already received the initial \$531 TED/BRD payment. Each received an additional \$198 payment. Disbursements to complete this phase of the project began Jan. 25, 2010 and all payments to qualified participants have been completed. A summary of payments is included in *Table 3*.

RECREATIONAL FISHERIES ASSISTANCE

A program designed to assist marinas was developed and implemented to provide economic assistance to the saltwater recreational fishing industry for losses incurred due to Hurricanes Katrina and Rita. Eligibility criteria for participating in the program are as follows:

- The marina facility must be open to the general public to provide access to the state's waterways for the purpose of accommodating the needs of recreational saltwater fishermen.

- The facility must have been listed on the LDWF Marine Recreational Fishing Statistical Survey (MRFSS) site register during 2004-2005.
- The owners/lessees of the marina must have allowed LDWF biologists to conduct scheduled MRFSS at their facility during 2008.
- The marina facility must be privately owned. (Publicly owned facilities are not eligible.)

The award amount is tiered based on predetermined fishing pressure estimated at each facility, and on measured or estimated storm surge at the facility resulting from Hurricanes Katrina or Rita. Payment tier levels are:

- Tier 1 - \$11,541.14
- Tier 2 - \$28,599.57
- Tier 3 - \$51,378.57
- Tier 4 - \$87,574.00
- Tier 5 - \$136,093.81

Owners/lessees were to complete and submit a socioeconomic survey for payment.

Through the reporting period, a total of 60 marinas were pre-qualified to participate in the assistance program, and 59 marinas have been paid a total of \$3,315,366. One "hostile" facility has returned a Memorandum of Understanding certifying that they will be cooperative in the MRFSS program and was awarded a base payment of \$5,770.57. An additional 10 facilities requested to be evaluated for eligibility. It was determined that seven of the 10 were eligible to participate in the program. Two facilities have requested reconsideration of their tier status.

RECREATIONAL ACCESS – REPAIRS TO ELMER'S ISLAND ROAD

LDWF worked in cooperation with the Louisiana Department of Transportation and Development (LDOTD) to restore access to an import coastal waterfront through the repairs of a three mile limestone road. This road was severely damaged during Hurricane Katrina, making it impassible due to large breaches. The repair of these breaches has allowed for vehicle passage and access to the important coastal waterfront.

BAITFISH DISEASE INVESTIGATIONS

LDWF worked in cooperation with the LSU School of Veterinary Medicine to develop aquaculture protocols for cocahoe minnows (*Fundulus grandis*) that would ensure a steady supply of healthy minnows, uniform in size, for the bait industry.

PROVIDING MARINE BAITFISH TO LOUISIANA ANGLERS

Working in cooperation with LDWF, the LSU AgCenter is developing parameters and protocols for holding marine bait fishes to provide a consistent source of cocahoe minnows (*Fundulus grandis*) to Louisiana anglers.

TABLE 3. Total first- and second-round, to-date payments to eligible commercial harvesters, commercial fishing vessel license holders, wholesale/retail seafood dealers and licensed charter boat fishing guides under the Louisiana Fishing Industry Supplement for Hurricane Recovery – Economic Assistance for Louisiana Commercial and Recreational Fishermen and TED-BRD Compliant Fishermen Program.

2nd SUPPLEMENTAL APPROPRIATION: PART 1 – JUNE 2008 THROUGH AUGUST 2009						
Assistance Payments to Resident Commercial Fishermen, Vessel Owners and Wholesale/Retail Seafood Dealers						
FISHERY	ORIGINAL ALLOCATION	BASE/EQUAL PAYMENT # PAID	TIER 1 # PAID	TIER 2 # PAID	TIER 3 # PAID	TOTAL AMOUNT PAID
RECREATIONAL						
Charter Captains - Equal Payments						
Charter Captains	\$529,586	443				\$325,605
Charter Captains Total	\$529,586	443				\$325,605
COMMERCIAL						
Harvesters/Vessel Owners - Base Payments						
Harvester	\$352,250	4,339				\$216,950
Vessel Owner	\$231,200	3,262				\$163,100
Base Payment Total	\$583,450	7,601	0	0	0	\$380,050
Tiered Payment by Fishery						
Shrimp Harvester	\$5,976,089		450	780	898	\$5,232,479
Shrimp Vessel Owner	\$5,080,860		448	704	788	\$4,706,596
TED/BRD: Equal Payment	\$825,460	1,132				\$601,092
Shrimp Total	\$11,882,409	1,132	898	1,484	1,686	\$10,540,167
Crab Harvester	\$2,466,160		218	322	371	\$2,106,265
Crab Total	\$2,466,160		218	322	371	\$2,106,265
Oyster Harvester	\$1,782,694		110	154	180	\$1,459,214
Oyster Vessel Owner	\$1,580,252		123	162	165	\$1,393,941
Oyster Total	\$3,362,946		233	316	345	\$2,853,155
SW Finfish Harvester	\$1,110,565		172	204	242	\$963,366
SW Finfish Vessel Owner	\$907,202		173	210	237	\$871,727
SW Finfish Total	\$2,017,767		345	414	479	\$1,835,093
Menhaden Vessel Owner	\$4,090,357					\$4,090,367
Menhaden Total	\$4,090,357		0	0	0	\$4,090,367
FW Finfish Harvester	\$228,819		64	96	119	\$150,813
FW Finfish Total	\$228,819		64	96	119	\$150,813
Wild Crawfish Harvester	\$464,572		65	127	170	\$322,897
Wild Crawfish Total	\$464,572		65	127	170	\$322,897
Wholesale/Retail Seafood Dealer						
W/R Seafood Dealer: Base Payments	\$63,400	399				\$39,900
W/R Seafood Dealer: Tiered Payments	\$1,216,475		73	101	138	\$1,024,148
W/R Seafood Deal Total	\$1,279,875	399	73	101	138	\$1,064,048
TOTAL	\$26,905,941	9,575	1,896	2,860	3,308	\$23,668,460

2nd SUPPLEMENTAL APPROPRIATION: PART 2 – SEPTEMBER 2009 TO PRESENT

Assistance Payments to Resident Commercial Fishermen, Vessel Owners and Wholesale/Retail Seafood Dealers

FISHERY	REMAINING FROM ORIGINAL ALLOCATION	BASE/EQUAL PAYMENT # PAID	TIER 1 # PAID	TIER 2 # PAID	TIER 3 # PAID	TOTAL AMOUNT PAID
RECREATIONAL						
Charter Captains						
Charter Captains	\$203,981	442				\$203,320
Charter Captains Total	\$203,981	442				\$203,320
COMMERCIAL						
Harvesters/Vessel Owners - Tiered Payments by Fishery						
Shrimp Harvester	\$650,612	n/a	450	780	898	\$650,434
Shrimp Vessel Owner	\$593,133	n/a	448	704	788	\$593,728
TED/BRD	\$224,368	1,132				\$224,136
Shrimp Total	\$1,468,113	1,132	898	1,484	1,686	\$1,468,298
Crab Harvester	\$386,031	n/a	218	322	371	\$385,499
Crab Total	\$386,031	n/a	218	322	371	\$385,499
Oyster Harvester	\$270,838	n/a	110	154	180	\$270,934
Oyster Vessel Owner	\$274,498	n/a	123	162	165	\$274,419
Oyster Total	\$545,336	n/a	233	316	345	\$545,353
SW Finfish Harvester	\$101,941	n/a	172	204	242	\$101,998
SW Finfish Vessel Owner	\$102,270	n/a	173	210	237	\$102,133
SW Finfish Total	\$204,211	n/a	345	414	479	\$204,131
Menhaden Vessel Owner	\$0	n/a				\$0
Menhaden Total	\$0	n/a	0	0	0	\$0
FW Finfish Harvester	\$80,139	n/a	64	96	119	\$80,138
FW Finfish Total	\$80,139	n/a	64	96	119	\$80,138
Wild Crawfish Harvester	\$146,007	n/a	65	127	170	\$145,993
Wild Crawfish Total	\$146,007	n/a	65	127	170	\$145,993
Wholesale/Retail Commercial Seafood Dealer - Tiered Payments						
W/R Seafood Dealer	\$203,672	n/a	73	101	138	\$203,803
W/R Seafood Deal Total	\$203,672	n/a	73	101	138	\$203,803
TOTAL	\$3,237,490	1,132	1,896	2,860	3,308	\$3,326,535

MARINA DATABASE UPDATE

LDWF worked in cooperation with LSU to begin re-designing the existing static marina, boat launch and commercial facility database created by LOSCO into an updatable database. The database will be available to the public online and will provide information on marinas, boat launches and commercial facilities such as operational status, location, ramp information, etc.

RECREATIONAL ACCESS – ARTIFICIAL REEF DEVELOPMENT

I-10 Twin Span Reefs

LDWF is working with the LDOTD to make beneficial use of concrete debris resulting from the destruction of the I-10 Twin Span bridges by Hurricane Katrina to create two artificial reefs in Lake Pontchartrain. The two phases of the project will provide habitat for marine fisheries species and opportunity for recreational fishers. Deployment of material at the South Twin Span Reef commenced February. In March, LDOTD offered 22 additional spans at no cost to the project. The deployment of material at the South Twin Span Reef was completed by December 2010. The survey of the reef will be conducted upon completion and the marking buoys deployed. The South Twin Span Reef will be constructed from 60 recycled bridge spans. The second phase of the bridge demolition is scheduled to be awarded by LDOTD in early 2011. Once awarded, the development of the North Twin Span Reef will commence. LDWF allocated \$915,000 towards the development of two new inshore reefs in Lake Pontchartrain. Approximately 27,000 tons of concrete bridge material from 102 spans will be deployed at the two artificial reefs.

Lake Pelto Reefs

The 2005 and 2008 hurricanes degraded the established and well-known Bird Island and Point Mast artificial reefs in Lake Pelto. LDWF allocated \$670,000 to restore the habitat which in turn would provide recreational opportunities. After performing some preliminary surveys of the two reefs, a decision was made to enhance the Point Mast Reef and to develop a new Bird Island II reef adjacent to the original Bird Island reef. Approximately 8,800 tons of #57 limestone was deployed over an eight-day period in November 2009 to create the two reef sites.

ECONOMIC DISASTER RELIEF FOR LOUISIANA DUE TO HURRICANES GUSTAV & IKE

The 2008 Hurricanes Gustav and Ike impacted the Louisiana coastline and its fisheries. The Secretary of Commerce declared a fishery resource disaster in the Louisiana Gulf of Mexico on Sept. 17, 2008 due to the devastation of Hurricanes Gustav and Ike. The passage of these storms severely impacted the commercial fishing industry through revenue and infrastructure losses. The LSU AgCenter estimated a maximum revenue loss to Louisiana fisheries as a result of Hurricanes Gustav and Ike in September 2008 to be \$70.6 million. The maximum estimated infrastructure loss determined by LSU AgCenter associated with these hurricanes is \$84.1 million. (These values were estimates as of Sept. 24, 2008.)

The U.S. Congress appropriated \$40 million to Louisiana for fisheries disaster assistance to the commercial fishing industry under sections 308(b) and 308 (d) of the Interjurisdictional Fisheries Act (16 U.S.C. 4107, NOAA Grant NA09NMF4520024). The appropriated funds are vital to the recovery of these important fisheries devastated by the hurricanes. These funds are being issued to provide partial cost reimbursement for uninsured or underinsured commercial fisheries infrastructure (docks, ice houses, vessels, fishing gear, etc.) that we damaged during the storms.

In June 2008, the Office of Fisheries launched the \$30 million Federal Fisheries Reimbursement Program to distribute the appropriated funds to qualified commercial fishermen and wholesale/retail dealers. In order to qualify for the program, individuals must have held a 2008 Louisiana Resident Commercial Fishing or Wholesale/Retail Dealer License and must have reported sales or purchases of saltwater species on LDWF trip tickets during Sept. 1, 2005 - Aug. 31, 2008 (and received by LDWF by Nov. 30, 2008). Eligible participants received an initial payment of 50 percent of the participant's eligible reimbursement amount. The remaining 50 percent of the reimbursement was to be issued after the participant submitted acceptable invoices/receipts documenting the use of the entire initial payment on eligible items.

Starting in July 2009, eligible participants began submitting their packets to SCPDC in Gray, La. SCPDC reviewed the packets for completion of all necessary documents, contacting the participants to complete documents if necessary, then scanned the completed packets into the electronic database. Once entered, files were submitted to LDWF staff for review of accuracy. LDWF staff ran weekly batches, reviewing a random 10 percent selection of vendor files. If more than 5 percent of the 10 percent of the vendor files had inaccuracies, the entire batch was sent back to SCPDC for re-review of the files. After re-reviewing the files and correcting any inaccuracies in the database, the files were sent back to LDWF for review. When less than 5 percent error rate was found, LDWF approved the batch for initial payment. The first checks were mailed out in September 2009. To date, \$14,867,489 in initial payment funds have been mailed out.

After receiving their first check, vendors started submitting receipts/invoices to SCPDC in September 2009. Once a vendor has submitted enough receipts/invoices to equal the amount of their first check, the receipts/invoices are scanned into the database. Starting in November 2009, LDWF pulled batches weekly from the database. The batches were then sent to the Louisiana Legislative Auditor's office for review of eligibility based on criteria determined by LDWF. After review, the Louisiana Legislative Auditor's office submitted reports to LDWF detailing whether or not a vendor submitted enough eligible receipt/invoices. Vendors with enough eligible receipts/invoices were approved for payment by LDWF. Vendors without enough eligible receipts/invoices were placed on an exception report. The exception report was sent

to SCPDC, where the vendors were then contacted and given a month to resolve their exception. At the end of the month, the exception vendors were sent back to the Louisiana Legislative Auditor's office for re-review. Vendors that resolve their exceptions were approved for payment by LDWF. Vendors that did not resolve their exceptions, were removed from their current batch, and placed back in the database until the exception was resolved. The first checks for the second portion of the program were mailed out Dec. 14, 2009. To date, \$9,731,783 in second payment funds have been mailed out.

Overall, 2,978 vendors have received initial payments (74 percent of all eligible vendors). Of those, 1,989 vendors also received second payments (66 percent of first check recipients). A total of \$24,599,272 in funds have been sent out to eligible participants.

ACCESS, OPPORTUNITY & OUTREACH

The Access, Opportunity and Outreach (AOO) of the Office of Fisheries accomplishes its objective by providing and maintaining artificial reefs, responding to threats from invasive species, managing public access sites, and engaging and supporting the resources' beneficiaries.

ARTIFICIAL REEF PROGRAM

Artificial reefs provided by AOO provide resource habitat benefits while giving anglers rich and abundant fishing areas in otherwise dormant conditions. The Louisiana Artificial Reef Program (LARP) was founded in 1986 through the cooperative efforts of the LSU Coastal Fisheries Institute (LSUCFI) and LDWF. Resultant legislation called for the development of a State Artificial Reef Plan and provided for an artificial reef program in Louisiana. Act 100 of the 1986 Legislature established that LDWF would operate the program with logistical support from LSUCFI. LDWF and LSUCFI produced a plan in the fall of 1986 that was accepted by the Louisiana Legislature. The plan outlined the siting, permitting and monitoring requirements of the program.

LARP was established to use obsolete oil and gas platforms to provide habitat for Louisiana's coastal fishes and fishing opportunities for recreational and commercial harvesters. Federal law and international treaty require oil exploration companies to remove these platforms one year

after production ceases. LARP has provided an opportunity for oil companies to contribute to maintenance of fisheries habitat. Since its inception, 65 oil and gas-related companies have participated in the offshore program and donated the jackets of 249 oil and gas structures. Twenty-six obsolete oil and gas structures were accepted into the offshore artificial reef program during fiscal year 2009-2010. Previously deployed offshore reef materials include 40 armored personnel carriers and one offshore tug.

Four deep-water oil and gas platforms have been accepted into the deep-water reef program. Even though these reefs are in water depths in excess of 400 feet, the structure establishing the reef must maintain sufficient profile in the water column to be accepted into LARP. The deployments of the platforms undergo a non-explosive partial removal process which preserves the established biological community with minimal disturbance, maintains fishing opportunities for residents, and saves money on the decommissioning of the platform.

LARP also manages a Special Artificial Reef Sites (SARS) program, specifically aimed at establishing artificial reefs under unusual and/or exceptional circumstances, including occurrences such as natural and man-made catastrophes outside LARP's nine artificial reef planning areas. The oil and gas industry in the Gulf of Mexico

continues to recover from the devastation of the 2005 and 2008 hurricane seasons. Industry has sought alternatives in cleanup activities to reduce the cost of removal and have petitioned LARP to accept structures at the location they were destroyed. LARP attempts to minimize negative impacts and the cost of removing these structures while maintaining and enhancing fisheries habitat. Industry is nearing completion of the remaining approved SARS projects related to the 2005 hurricanes. A moratorium on future SARS is in effect by the Bureau of Ocean Energy Management, Regulation and Enforcement.

In addition, the reef program has developed 27 inshore reefs, primarily low-profile reefs composed of shell and limestone. LDWF constructed eight reefs, and 19 others were constructed in association with public conservation and private groups. In working with one of these groups, LDWF constructed eight reefs using reef balls. Reef balls have been deployed successfully in tropical and oceanic environments, but this was the first attempt to deploy in an estuarine setting.

AQUATIC PLANT RESEARCH & CONTROL PROGRAM

Our natural resources are constantly under attack from invasive species posing a threat to healthy habitats and access opportunities for the beneficiaries. Programs driven by AOO are designed to regulate and control threats from invasive species.

The flagship of these initiatives is our nuisance aquatic vegetation control program, which strives to provide the public with safe and usable fishing and boating access. Left unchecked, invasive plants such as giant salvinia and water hyacinth would choke the state's abundant freshwater lakes making them inaccessible and threatening the natural habitat of our valuable aquatic species. Through an aggressive aquatic plant control program, LDWF utilizes a variety of management options including herbicides, drawdowns and biological controls.

During fiscal year 2009-2010, the Aquatic Plant Research and Control Program provided substantial benefits to the citizens of Louisiana. Responsibilities included monitoring water bodies for non-native and invasive aquatic vegetation, providing technical assistance, and continually investigating more effective and environmentally safe methods of controlling these nuisance plants. Aggressive treatment of affected waters continued in an effort to restore and improve the aquatic habitat and the natural balance of plants and fish. Control of nuisance plant species is also necessary to provide boating access to many public waterways.

To prevent habitat degradation from exotic aquatic vegetation and to maintain angler and boater usage throughout the state, aquatic herbicides are used to treat nearly a third of the state's fishable waters annually. LDWF crews throughout the state treated 146 water bodies during fiscal year 2009-2010.

A total of 73,970 acres were treated throughout the state. Of that total, 118 acres were sprayed below the saltwater line.

Biologists continue to provide advice and technical assistance to private and municipal pond owners concerning aquatic vegetation management issues. This popular extension program also provides aquatic plant identification assistance for the public upon request.

Research projects of the Aquatic Plant Research and Control Program include an evaluation of new herbicides to determine their effectiveness for use in aquatic weed control.

LDWF utilized conservation funds and federal funds to control water hyacinth (*Eichhornia crassipes*) with the herbicides 2, 4-D and glyphosate. However, in the course of treating water hyacinth, emergent plants such as alligatorweed (*Alternanthera philoxeroides*), primrose (*Ludwigia spp.*), American lotus (*Nelumbo lutea*) and several others of minor importance were also sprayed. Some aquatic weeds, such as hydrilla (*Hydrilla verticillata*) and two species of salvinia (*Salvinia minima* and *S. molesta*), required more expensive herbicides. Hydrilla was controlled with both pellet and liquid formulations of fluridone. Salvinia was treated with a mix of diquat and glyphosate and a new herbicide called penoxsulam. State funds in the Aquatic Plant Control Fund were used to purchase herbicides to address infestations of these plants. Statewide, giant salvinia is now present in many public waterways that are heavily timbered and difficult to access. Spray crews spent a great deal of time searching for and treating these troublesome infestations.

Fifteen percent of the Aquatic Plant Control Fund was used to fund research into aquatic plant control by the LSU AgCenter. LSU continued its research into biological control of salvinia using the salvinia weevil (*Cyrtobagous salviniae*). Research efforts are currently focused on rearing a sufficient number of weevils to release on infestations of salvinia. Biological control of giant salvinia using the salvinia weevil is recognized as the leading and most often used control strategy throughout the world due to its highly effective nature. In 2009-2010, six new weevil nursery ponds were established in Lafourche, Terrebonne, St. Charles and Natchitoches parishes. Several of these ponds are expected to have high enough weevil densities in 2011 to establish new populations in public water bodies across the state that are plagued with giant salvinia infestations.

In addition to use of herbicides, certain nuisance aquatic plants can be controlled by manipulating water levels (drawdowns). Twelve lakes were drawn down during fiscal year 2009-2010 for aquatic plant control.

As part of the aquatic habitat management program, crews throughout the state cut and removed logs and trees that had fallen into waterways and obstructed navigation. A total of 63 water bodies were cleared of logs and trees throughout the year, taking 381 man-hours of work.

PUBLIC BOATING & FISHING ACCESS

AAO also creates, enhances and restores our state's inventory of public boating and fishing access sites. Access sites, such as marinas, boat launches and fishing piers, serve as doorways to our state's natural resources. In a cooperative effort, LDWF assists local government entities requesting financial assistance in the development and construction of boating and fishing access facilities. To accomplish this, LDWF obligates a portion of its federal funding and Sport Fish Restoration (SFR) funds to match up to 75 percent of the total costs of these projects. This program funds both freshwater and saltwater projects, including the construction of boat ramps, parking areas, docks, bulk heading and fishing piers. A total of 82 projects are complete to date and another 15 are in various stages of either planning or construction.

Tax revenues from these sites provide economic benefit to the state from consumer use by owners and recreational users. Not strictly limited to site selection and construction oversight duties, the Office of Fisheries also works in concert with local municipalities, media channels and landowners in the marketing and promotion of the sites.

Issues related to past hurricanes continue to adversely affect progress on boat ramp construction. Some of the issues that local and state government sponsors are facing include priority spending and higher construction costs.

Public Access Facilities For Boating and Fishing Currently Under Construction or in the Planning Stage:

- Abbeville Public Boat Launch
- Reserve Boat Launch, Phase II
- Reserve Boat Launch, Phase III
- Golden Meadow Public Boat Launch
- Burns Point Park Boat Launch
- Jessie Fontenot Boat Launch, Phase III
- North Pass
- Bayou Macon
- Tensas Basin
- Baker's Cut-Off
- Gateway Landing, Washington
- Leonville Boat Launch
- Empire Marina
- Lake Claiborne Boat Lane Marking
- New Iberia Ship Wreck (BIG-P)

Projects Completed During Fiscal Year 2009-2010:

- South Houma Fire Station Boat Launch
- Texas Gulf Road Boat Launch
- Venice Marina

OUTREACH

Through outreach efforts, LDWF advises beneficiaries on stewardship and best practices in preserving the unique nature of the state's natural resources. Via a strong presence at youth recreational events, industry-related expos and other state sponsored events, the department strives to align its efforts with the desires of citizens and foster a community sense of resource and habitat stewardship.

The Aquatic Outreach Program (F-136-EO) is designed to inform the public about the SFR, as it is a vital funding source for aquatic access, resource enhancement and management projects in Louisiana. LDWF participated in 16 public events throughout the year to inform attendees of the department's various SFR projects and the importance of purchasing a fishing license. An assortment of printed materials were distributed at these events, as well as a SFR brochure, designed specifically to highlight the funding cycle and projects SFR funding supports.

In addition to increased participation in public events, the Fisheries Research Laboratory personnel provide samples and use of educational facilities for the outreach staff. Lab personnel participated in the WETSHOP program, a "hands-on" environmental program for teachers, and assisted the Pontchartrain Institute for Environmental Sciences with their summer educational program. The new Grand Isle Fisheries Research Laboratory has a classroom and lab space for instruction and hands-on learning. School and community groups have access to the lab for various educational opportunities.

Throughout the year, various media outlets covered Fisheries outreach events, including both print and broadcast.

Groundwork for new print materials was completed during this timeframe and is scheduled to be completed in fiscal year 2010-2011.

Through participation in outreach events and distribution educational materials, the Aquatic Outreach Program message reached over 20,000 Louisiana citizens.



HABITAT STEWARDSHIP & RESOURCE MANAGEMENT

Sustainable and abundant fishery resources in Louisiana, the "Sportsman's Paradise," are the key function of the Office of Fisheries. Louisiana's fishery resources, including habitat, benefit all constituent groups (commercial and recreational users and visitors) in Louisiana, across the Gulf Coast and throughout the nation. The Louisiana Constitution of 1974 provides the framework to protect and enhance habitat, and to ensure sustainable commercial and recreational fisheries. Fisheries collects the basic ecological data needed to efficiently and effectively manage fisheries resources to benefit constituent groups. Habitat stewardship and resource management provide opportunities for the public to access these natural resources.

HABITAT MANAGEMENT

The Habitat Management Program's purpose is participation in federal, state and local planning and permitting efforts to help conserve, protect and enhance healthy, viable habitat for fisheries resources. Program activities include:

- Review and comment of coastal use permits and consistency applications within the coastal zone.
- Oversight of all permitted activities within the state's public oyster grounds.
- Planning and comment activities associated with the state's coastal restoration activities and with large civil works projects such as hurricane protection levee systems and creation of reservoirs.
- Participation in the interagency advisory panels for the state's two freshwater diversion structures.
- Response and damage assessment activities resulting from unpermitted discharges of oil or hazardous material.
- Regulation of seismic exploration activities.

COASTAL USE PERMIT REVIEW

In 2009, Fisheries reviewed approximately 176 new coastal use permit applications (along with assessments and waivers) within the public oyster seed grounds and approximately 100 habitat projects, for a total of approximately 276 projects. Fisheries staff collected \$1,248,671.58 in compensation for impacts to the public oyster seed grounds.

COASTAL WETLANDS

In 2009, the Research and Assessment Section continued to work with state and federal agencies to develop strategies for slowing the rate of coastal wetlands loss in Louisiana. Following Hurricanes Katrina and Rita in 2005, the state of Louisiana embarked on a joint coastal planning process that included both hurricane protection and coastal wetlands restoration. The U.S. Army Corps of Engineers (USACE) received funding through a series of supplemental appropriations to provide "100 year-level flood protection" in the New Orleans vicinity. USACE put forward individual environmental reports in lieu of Environmental Assessments or Environmental Impact Statements to support this goal. Section staff worked to coordinate and review these hurricane reaches and understand their impacts on estuarine and coastal environments.

In addition, there were a number of coastal restoration projects moving through the formulation and development process. They include:

- Mississippi Gulf River Outlet restoration and the Violet Diversion studies.
- Reauthorization studies of the Caernarvon and Davis Pond Freshwater Diversion projects.
- The Morganza to the Gulf hurricane protection levee.
- Deepening of the Houma Navigation Canal.
- Donaldsonville to the Gulf hurricane protection levee.
- Planning for the Port of Iberia Channel Deepening Project.
- The Southwest Louisiana Coastal Plan.
- The Calcasieu Dredged Material Management Plan.
- The Sabine-Neches Waterway Plan.

Section staff also participated in evaluation of 10 Coastal Wetlands Planning, Protection and Restoration Act projects for priority lists 18 and 19. Up to four of the 10 projects may be funded annually for engineering and development activities.

CAERNARVON & DAVIS POND FRESHWATER DIVERSION PROJECTS

Extensive fisheries resource monitoring programs continued for both the Caernarvon and Davis Pond freshwater diversion projects. The Caernarvon Project has been operational for 18 years, and LDWF personnel have monitored its effects on the fish, wildlife and vegetation populations in the basin throughout its operation. The Davis Pond Project came on-line in July 2002. Ongoing maintenance designed to address problems with flooding in the ponding area north of Lake Cataouatche continued to limit the amount of freshwater diverted through the Davis Pond structure. Research and Development Section staff provides input into the operation of both structures.

OIL SPILLS & HAZARDOUS MATERIALS

LDWF's Oil Spill Task Force continued in 2009 to develop and implement plans to protect and restore the state's wildlife, fishery and habitat resources from the adverse effects of oil spills. During fiscal year 2009-2010, state and federal trustees worked on approximately 20 ongoing oil spill assessment/restoration plans. In addition, the trustees continued to work on developing a way to estimate amounts and impacts of oil spilled as a result of Hurricanes Katrina and Rita.

LDWF participates with other state and federal agencies in planning restoration of hazardous materials sites. Two planning activities continued in 2009:

1. Bayou Trepagnier in St. Charles Parish.
2. Calcasieu River in Calcasieu Parish.

LDWF also evaluated and responded as needed to approximately 3,000 oil spill notifications, which were received from Louisiana State Police. These notifications covered a range of hazardous emissions and chemical spills, as well as oil spill-related incidents.

SEISMIC SECTION

The LDWF Seismic Section was created in 1939 specifically to protect oysters, fish, shrimp and other wildlife from the effects of seismic exploration. Seismic exploration uses energy waves to generate a profile of sub-surface reflective layers that help define potential oil and gas traps. The energy waves can be produced by explosives detonated below the ground, by air guns that emit a powerful burst of air just above the surface, or by large vibrating pads placed on the surface. These projects can occur in sensitive wetlands, water bodies and uplands. Seismic agents monitor geophysical companies to protect Louisiana's fish and wildlife resources by ensuring compliance with LDWF seismic rules and regulations. During 2009, the Seismic Section monitored 24 projects throughout the state.

LAKE MANAGEMENT

In fiscal year 2009-2010, district fisheries managers estimated relative abundance, size class structure and species composition of fish populations and physiochemical characteristics of the water in some 90 to 100 lakes, rivers and streams. All lakes are sampled in a similar manner so

that data from different water bodies are comparable from year to year.

Electrofishing sampling is conducted in both spring and fall to provide a measure of population including abundance, size distribution, age structure and genetic composition. Sampling includes only largemouth bass in the fall; crappies are included in the spring. A forage sample of all species is also collected in the fall. Sampling sites are predetermined and selected to represent available aquatic habitats within the water body. Sampling protocol is standardized to the extent possible to allow for comparison of data over time.

Gill net samples are taken during winter, primarily to determine relative abundance and length frequencies of gizzard shad, striped bass, hybrid striped bass and commercial and rough fish species. Monofilament nets with mesh sizes from 2.5 to 4 inches (bar mesh) are set at dusk and gathered at sunrise. Each fish taken is identified, weighed and measured. This sampling method provides gear selectivity, species composition and length frequency information. Nighttime shoreline seine sampling measures reproductive success of the sunfishes including bass and bluegill. Year-class strength, species composition and prey availability are provided by this sampling effort. Sampling is conducted during spring and summer and consists of one quadrant haul at each sample site using a 25 by 6 foot seine.

Lead nets are used to measure relative abundance and length-frequencies of crappie and other sunfish. Species composition, growth rate and length-weight relationships are determined. Sampling is conducted at pre-determined sites for a minimum of 48 hours each, with two nets at each station.

Water quality samples are taken at all sampling stations. Water temperature, pH, dissolved oxygen concentration, conductivity, oxidation/reduction potential and water depth are measured.

Creel samples were conducted on six water bodies in 2010. This sampling method puts the fisheries manager in direct contact with fishermen. Information collected includes species sought and species caught, distance traveled, time fished, number caught and released, and a measurement of all fish harvested.

In addition, inland biologists continued a statewide project to determine growth and mortality rates of largemouth bass and crappie populations. Largemouth bass samples were collected from 12 lakes, while crappies were collected from 25 lakes in throughout the year. The extensive data collected is used in consideration of existing and proposed harvest regulations.

COMPLETION OF FISHERIES MANAGEMENT PLANS FOR THE FOLLOWING LAKES:

- Toledo Bend
- DeSiard Bayou

- Iatt Lake
- False River
- Big Mar – Caernarvon
- Atchafalaya Basin
- Bundick Lake
- Vernon Lake

SPECIES OF SPECIAL CONCERN

The Office of Fisheries also monitors other fish species, including paddlefish and sturgeon. Biologists continue to collect data on relative abundance, habitat requirements, movements and population estimate, and spawning studies. The 2010 season marks the last regular season sampling for river sturgeon from the Old River Control Complex by the Natchitoches National Fish Hatchery and by LDWF.

There were three main objectives for sturgeon sampling at the Old River Control Complex during the 2009-2010 season:

1. Training LDWF and other biologists in the field identification, care and data collection for river sturgeon wherever they may be encountered in sampling large rivers of Louisiana.
2. Implanting more pallid sturgeon with ultrasonic transmitters for the on-going sturgeon telemetry study in the Old River Control Complex area and downstream toward the Gulf of Mexico.
3. Collecting blood samples from 15 sturgeon (five from each of PLS, PXH and HSN) for the ongoing DNA content study to determine river sturgeon taxonomic identification.

Secondary objectives included the taking of fin clips for genetic analysis, taking morphometric measurements for sturgeon taxonomic identification, documentation with sturgeon head photos, tagging sturgeon with PIT and Floy tags, and checking for any recaptured sturgeon.

Overall, 112 river sturgeon – pallid *S. albus* (PLS), shovelnose *S. platyrhynchus* (HSN) and morphologically intermediate forms (PXH) – were captured by using gill nets or by trotlines. A total of 10 pallid sturgeons were implanted with ultrasonic transmitters this season. Approximately 10 satellite receiver stations have been established along reaches of the Mississippi River to monitor movement of pallid sturgeon.

Paddlefish fry are still produced annually at Booker Fowler Fish Hatchery for the "Native Fishes in the Classroom Program," where students learn the early development and life history of this ancient river fish in their classroom each spring. Approximately 30 teachers participated in the statewide program during fiscal year 2009-2010.

PONDS & FISH DISEASE MANAGEMENT

Giving technical advice to owners of ponds and small lakes is also a responsibility of the Office of Fisheries. During fiscal year 2009-2010, biologists made site visits, assisting residents of the state on problems ranging from

construction and stocking requirements, to harvest and disease information. Biologists also answered over 2,500 phone inquiries regarding various pond-related issues. The Louisiana Cooperative Fish Disease Project, which the division heads along with the LSU Animal Diagnostic Lab within the School of Veterinary Medicine, provides support to private pond owners. From June 1, 2009 to June 30, 2010, a total of 134 cases were submitted to the LSU Aquatic Diagnostic Lab. Of this total, 65 were submitted under the Louisiana Cooperative Fish Disease Project. Ten of these cases involved sport fish from private recreational fishing ponds, one involved fish from state lakes or hatcheries, eight involved marine recreational or commercial species, and 46 involved fish from various state research projects. The remaining cases were from ornamental and aquarium fish, fish for inspection/certification prior to shipment from commercial sources, bacterial identification for other labs, bioassay testing labs, and commercial food fish operations.

Fisheries is also responsible for conducting investigations into fish kills in freshwater. Area impact and losses are recorded for each kill. Naturally occurring dissolved oxygen depletion, as well as saltwater intrusion, was indicated as the cause of most kills. Disease pathogens are sometimes responsible for fish kills in freshwater. LDWF personnel began working with the Louisiana Department of Agriculture and Forestry to sample fish stocks for detection of Viral hemorrhagic septicemia in wild and farm raised fish stocks. Viral hemorrhagic septicemia most often infects fish stocks during winter months. Continued investigations into the largemouth bass virus problem were also conducted. Inland fisheries personnel investigated approximately 35 fish kills throughout the state in 2009-2010. Most were the result of naturally occurring low dissolved oxygen situations.

In the fiscal year 2009-2010, Fisheries collaborated with state and federal agencies to conduct sampling for an "Ecological Assessment of the Mississippi River in Louisiana." The goal of the cooperative effort was to improve the science of the Mississippi River in Louisiana to support river assessment and management by the Louisiana Department of Environmental Quality and other state management agencies.

In cooperation with the Louisiana Department of Environmental Quality, the Department of Health and Hospitals, and the Louisiana Department of Agriculture and Forestry, Fisheries developed a protocol for issuing public health advisories for chemical contaminants in recreationally caught fish and shellfish.

Biologists continued to work through the Atchafalaya Basin Technical Group in the consideration of proposed projects in the development of the Atchafalaya Basin Annual Plan. The Louisiana Legislature approved \$3.5 million in state funding for water quality/water management, access and habitat restoration projects identified in fiscal year 2009-2010 Atchafalaya Basin Program Annual Plan, the first since adoption of Act 606. In 2009-2010, the

legislature also continued involvement with the Federal Energy Regulatory Commission relicensing process for the Toledo Bend Hydroelectric Project located in Desoto, Sabine and Vernon parishes. LDWF and other regulatory agencies formed an Aquatic Resources Working Group to help develop and guide the fisheries studies needed to assess project impacts.

SHELLFISH, MOLLUSK & FINFISH MANAGEMENT

Fisheries Management Programs include shellfish, mollusk and finfish management. In addition to headquarter operations, the Office of Fisheries' responsibilities are conducted throughout LDWF's seven coastal study areas.

SHELLFISH MANAGEMENT

The Office of Fisheries continued its long-term trawl sampling program throughout coastal Louisiana. Fisheries biologists collected 574 6-foot trawl and 1,852 16-foot trawl samples from both inshore and offshore waters in each of seven coastal study areas. Data from these samples were used to recommend season frameworks for both the fall and spring inshore shrimp seasons and winter territorial sea shrimp seasons. In addition, these same data were used to recommend season extensions and special seasons and provide recruitment indices for Gulf menhaden and blue crabs.

SHRIMP

The shrimp fishery is Louisiana's most valuable commercial fishery. Louisiana continues to lead the nation in shrimp landings. Louisiana's shrimp landings in 2009 totaled approximately 70.6 million pounds (all species combined/heads-off weight) and accounted for \$117.2 million in dockside sales. Brown shrimp landings comprised approximately 29 percent of 2009 landings and have continued to decline over the past six years, measuring 17.3 million pounds below the long-term mean (1976-2009). Conversely, white shrimp landings over the past six years continued to exceed the long-term mean, and landings in 2009 measured nearly 48.4 million pounds, an increase of 7.5 million pounds from the previous year. White shrimp landings in 2009 measured 17.6 million pounds above the long-term mean.

Due to significant differences in patterns of shrimp recruitment, growth and immigration between geographic areas, the Louisiana coast has been divided into three Shrimp Management Zones to better manage the resource (Figure 2). Shrimp management recommendations are listed below by zone.

Shrimp Management Recommendations

Based upon analysis of historic data as well as data generated from biological sampling conducted by LDWF, the following management practices were implemented during the report period: sample data were used to set the opening and closing dates of the 2009 and 2010 spring inshore shrimp seasons, set opening and closing dates of the 2009 fall inshore shrimp season, extend inshore seasons in portions of inside waters, and close and then reopen to shrimping portions of Louisiana outside territorial waters.

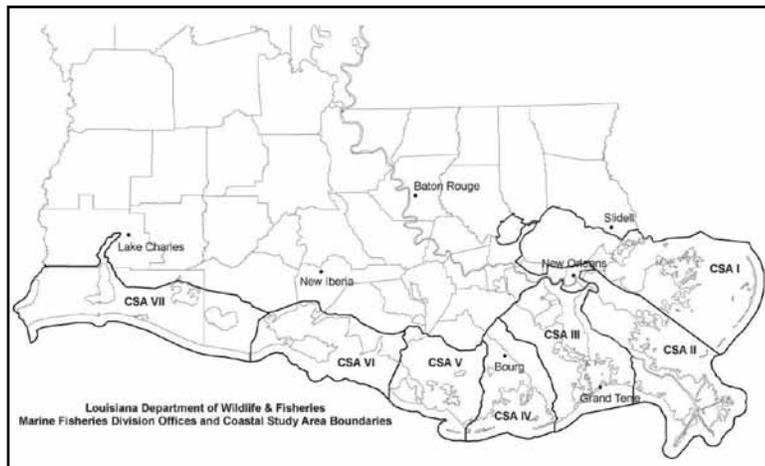


FIGURE 1. Marine Fisheries Section Coastal Study Areas

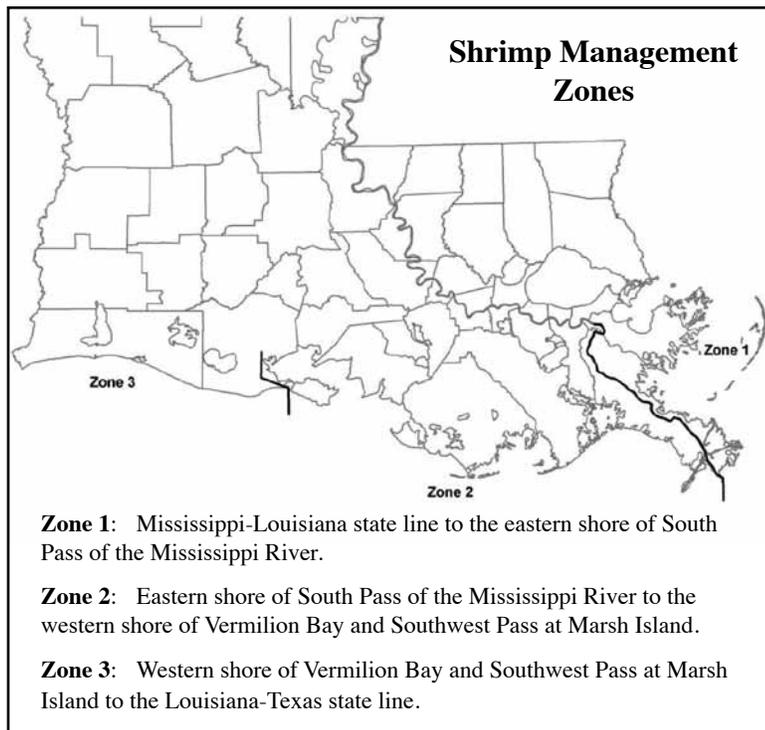


FIGURE 2. Louisiana Shrimp Management Zones

Shrimp Management Zone 1

2009 - Spring Inshore Shrimp Season

- Opened at 7:30 a.m. on May 18, 2009, except for the open waters of Breton and Chandeleur sounds as described by the "double-rig line" in LA R.S.56:495.1(A)2, which opened at 7:30 a.m. on May 11, 2009.
- Closed June 30, 2009 at 6:00 a.m., except for the following:
 - Lake Pontchartrain, Rigoletes Pass from the mouth of Lake Pontchartrain extending eastward to the western side of the CSX Railway Bridge.
 - Chef Menteur Pass from the mouth of Lake Pontchartrain southeasterly to the mouth of Lake Borgne, the Mississippi River Gulf Outlet (MRGO) beginning at its juncture with the Industrial Canal.

- That portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 09 minutes 39.6 seconds north and longitude 89 degrees 30 minutes 00 seconds west; thence southeasterly to a point at latitude 30 degrees 03 minutes 12 seconds north and longitude 89 degrees 21 minutes 30 seconds west; thence northeasterly to the most easterly point on Isle Au Pitre at latitude 30 degrees 09 minutes 20.5 seconds north and longitude 89 degrees 11 minutes 15.5 seconds west, which is a point on the double-rig line as described in LA R.S. 56:495.1(A)2; thence northerly along the double-rig line to a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 12 minutes 37.9056 seconds north and longitude 89 degrees 10 minutes 57.9725 seconds west; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning.
- The open waters of Breton and Chandeleur Sounds as described by the "double-rig line."
- Closed July 11, 2009 at 6 a.m., except for the following:
 - That portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 09 minutes 39.6 seconds north and longitude 89 degrees 30 minutes 00 seconds west; thence southeasterly to a point at latitude 30 degrees 03 minutes 12 seconds north and longitude 89 degrees 21 minutes 30 seconds west; thence northeasterly to the most easterly point on Isle Au Pitre at latitude 30 degrees 09 minutes 20.5 seconds north and longitude 89 degrees 11 minutes 15.5 seconds west, which is a point on the double-rig line as described in LA R.S. 56:495.1(A)2; thence northerly along the double-rig line to a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 12 minutes 37.9056 seconds north and longitude 89 degrees 10 minutes 57.9725 seconds west; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning.
 - The open waters of Breton and Chandeleur sounds as described by the double-rig line.
 - The open waters of Mississippi, Breton and Chandeleur sounds remained open to shrimping until 6:00 a.m. March 31, 2010.

2009- Fall Inshore Shrimp Season

- Opened at 6:00 a.m. on Aug. 10, 2009.
- Closed Dec. 22, 2009, at official sunset except for that portion of Zone 1 extending north of the south shore of the MRGO, including Lake Pontchartrain and Lake Borgne and the open waters of Breton and Chandeleur sounds as described by the "double-rig line."
- Closed Jan. 14, 2010 at official sunset except for the open waters of Breton and Chandeleur sounds as described by the "double-rig line."
- Breton and Chandeleur sounds remained open to shrimping until 6:00 a.m. March 31, 2010.

2010 - Special Shrimp Season

- Opened at 6:00 a.m. April 28, 2010 in the open waters of Breton and Chandeleur sounds as described by the double-rig line in LA R.S. 56:495.1(A)2.
- Opened at 6:00 a.m. April 29, 2010 in the remainder of Zone 1 except those waters south of 29 degrees 30 minutes north latitude.
- Closed at 6:00 a.m. April 30, 2010 south of the southern shore of the MRGO.
- Closed at 6:00 p.m. May 4, 2010 in the remainder of Zone 1 including all state outside territorial waters seaward of the inside/outside shrimp line from the Mississippi/Louisiana state line to the western shore of South Pass at the Mississippi River at 89 degrees 08 minutes 42 seconds west longitude.

2010 - Spring Inshore Shrimp Season

- Opened at 6:00 a.m. May 31, 2010, except for the following:
 - The open waters of Breton and Chandeleur sounds as described by the "double-rig line."
 - Those waters extending north of Martin Island at 29 degrees 57 minutes 29.6 seconds north latitude; thence northward to Isle au Pitre at 30 degrees 09 minutes 20.5 seconds north latitude from the double-rig line westward to 89 degrees 17 minutes 10 seconds west longitude.
 - Those waters south and east of Baptiste Collette Bayou
 - State outside waters seaward of the inside/outside shrimp line from the eastern shore of South Pass of the Mississippi River eastward to the Mississippi/Louisiana state line.
- Closed at 6:00 a.m. July 20, 2010, except for the following:
 - Lake Pontchartrain, including Rigoletes Pass from the mouth of Lake Pontchartrain extending eastward to the western side of the CSX Railway Bridge.
 - Chef Menteur Pass from the mouth of Lake Pontchartrain southeasterly to the mouth of Lake Borgne.
 - That portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 09 minutes 39.6 seconds north and longitude 89 degrees 30 minutes 00.0 seconds west; thence due south to a point at latitude 30 degrees 05 minutes 00.0 seconds north and longitude 89 degrees 30 minutes 00.0 seconds west; thence southeasterly to a point on the western shore of Three-Mile Pass at latitude 30 degrees 03 minutes 00.0 seconds north and longitude 89 degrees 22 minutes 23.0 seconds west; thence northeasterly to a point on Isle Au Pitre at latitude 30 degrees 09 minutes 20.5 seconds north and longitude 89 degrees 11 minutes 15.5 seconds west, which is a point on the double-rig line as described in LA R.S. 56:495.1(A)2; thence northerly along the double-rig line to a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 12 minutes 37.9056 seconds north and

longitude 89 degrees 10 minutes 57.9725 seconds west; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning.

- The open waters of Breton and Chandeleur sounds as described by the "double-rig line."

Shrimp Management Zone 2

Offshore territorial waters seaward of the inside/outside shrimp line from the eastern shore of Freshwater Bayou Canal at 92 degrees 18 minutes 33 seconds west longitude to the U.S. Coast Guard navigational light off the northwest shore of Caillou Boca at 29 degrees 03 minutes 10 seconds north latitude and 90 degrees 50 minutes 27 seconds west longitude were closed to shrimping at official sunset on Dec. 22, 2009.

Offshore territorial waters seaward of the inside/outside shrimp line and east of the Atchafalaya River Ship Channel at Eugene Island as delineated by the river channel red buoy line to the U.S. Coast Guard navigational light off the northwest shore of Caillou Boca at 29 degrees 03 minutes 10 seconds north latitude and 90 degrees 50 minutes 27 seconds west longitude reopened to shrimping at 6:00 a.m. April 21, 2010.

Offshore territorial waters seaward of the inside/outside shrimp line from the Atchafalaya River Ship Channel westward to Freshwater Bayou Canal opened at noon, April 29, 2010.

Offshore territorial waters seaward of the inside/outside shrimp line from the western shore of South Pass of the Mississippi River at 89 degrees 08 minutes 42 seconds west longitude westward to the eastern shore of Quatre Bayou Pass at 89 degrees 50 minutes 32.5 seconds west longitude were closed to shrimping at 6:00 p.m. May 6, 2010.

Offshore territorial waters seaward of the inside/outside shrimp line from the western shore of Quatre Bayou Pass at 89 degrees 50 minutes 32.5 seconds west longitude westward to Freshwater Bayou Canal at 92 degrees 18 minutes 33 seconds west longitude were closed to shrimping at 6:00 p.m. May 8, 2010.

Offshore territorial waters seaward of the inside/outside shrimp line from the Mississippi River westward to the eastern portion of Atchafalaya Bay at Pointe au Fer Island at 91 degrees 20 minutes 44 seconds west longitude reopened to shrimping at noon May 10, 2010.

2009 - Spring Inshore Shrimp Season

- Opened at 7:30 a.m. on May 11, 2009
- Closed at 6:00 a.m. on June 22, 2009

2009 - Fall Inshore Shrimp Season

- Opened at 6:00 a.m. on Aug. 10, 2009
- Closed at official sunset on Dec. 22, 2009

2010 - Special Shrimp Season

- Opened at noon April 29, 2010
- Closed at 6:00 p.m. May 4, 2010

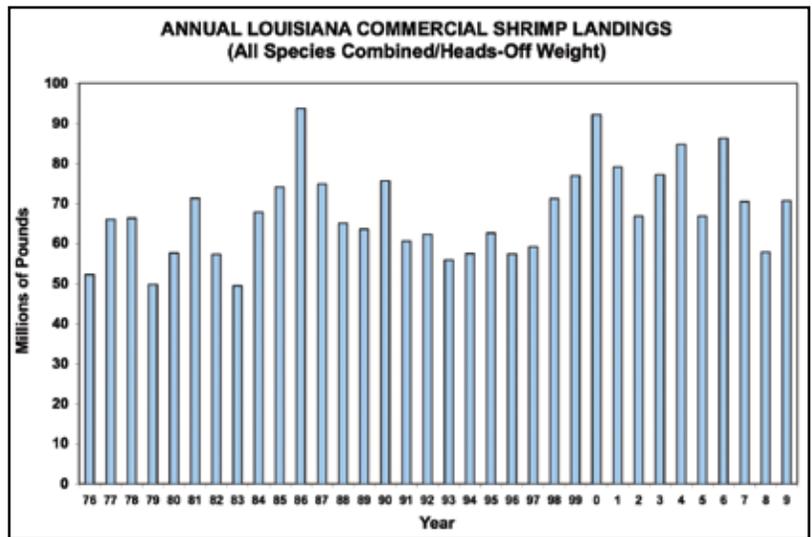


FIGURE 3. Louisiana Commercial Shrimp Landings

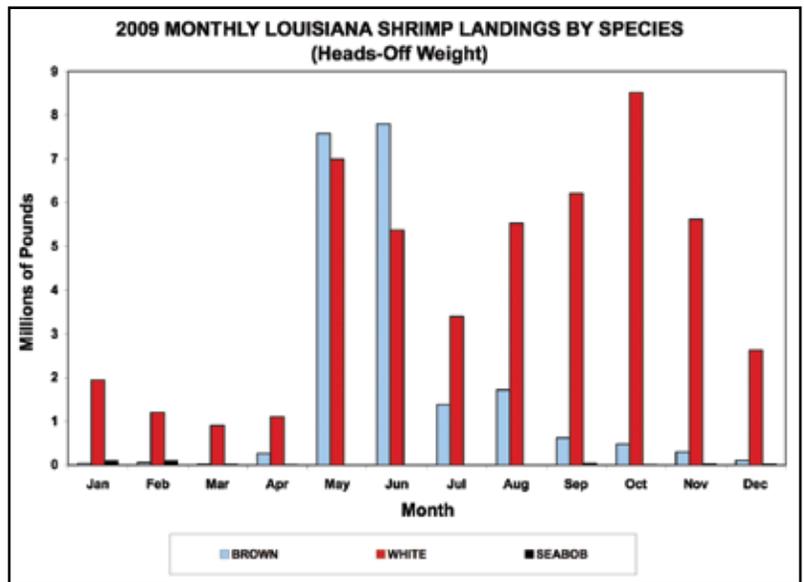


FIGURE 4. Louisiana Monthly Shrimp Landings by Species

2010 - Spring Inshore Shrimp Season

- Opened at 6:00 a.m. on May 10, 2010
- Closed at 6:00 p.m. on July 5, 2010

Shrimp Management Zone 3

2009 - Spring Inshore Shrimp Season

- Opened at 7:30 am on May 25, 2009
- Closed at 6:00 a.m. on July 11, 2009

2009 - Fall Inshore Shrimp Season

- Opened at 6:00 a.m. on Aug. 10, 2009
- Closed at official sunset on Dec. 22, 2009

2010 - Spring Inshore Shrimp Season

- Opened at 6:00 a.m. on May 8, 2010.
- Closed at 6:00 a.m. on July 20, 2010, except for the following:
 - That portion of the Calcasieu Ship channel originating at a line between Channel Markers 85

and 86 southward to a point originating along the inside/outside shrimp line at Calcasieu Pass and including East Pass from its origin at the Calcasieu Ship Channel to the south end of Calcasieu lake and West Pass from its origin at the Calcasieu Ship Channel to the south end of West Cove.

- That portion of Cameron Parish west of Calcasieu Lake.

Commercial shrimp landings since 1976 have ranged from a high of 93.7 million pounds (heads-off weight/ all species combined) reported in 1986 to 49.4 million pounds landed in 1983 (Figure 3). Brown shrimp landings in 2009 were greatest during May, June and July, while white shrimp production peaked in October at nearly 8 million pounds. Seabob landings were highest during late fall and early winter (Figure 4).

FEDERAL AID PROJECTS

The Office of Fisheries has also continued the administration of a \$148,298 federal grant (Inter-jurisdictional Assessment and Management of Louisiana Coastal Fisheries -NOAA/Department of Conservation Award No. NA07N-MF4070050). The objective of the Inter-jurisdictional Fisheries Project is to maintain a coast-wide monitoring program for parameters relevant to important fisheries resources, including both population dynamics and associated hydrological and environmental parameters, and to use information gathered to make rational management decisions. Technical, biological and hydrological data gathered from the monitoring program were utilized in establishing seasonal frameworks within the shrimp and oyster fisheries, predicting annual gulf menhaden (*Brevoortia patronus*) abundance, and providing data for the management of groundfishes and blue crabs (*Callinectes sapidus*). These data have provided estimates of size, density and growth of juvenile penaeid shrimp on the nursery grounds and staging areas, movement of sub-adult shrimp from the nursery grounds to staging areas, and the abilities to correlate juvenile shrimp response and subsequent production to hydrologic conditions. Data collected from the monitoring program were crucial in establishing opening and closing dates for shrimp seasons within Louisiana inside and outside territorial waters during the fiscal year. Hydrological and biological data collected on oyster recruitment (spat set) and oyster density and availability estimates were used in formulating management recommendations regarding the oyster season on the public oyster seed grounds and seed reservations. Harvest estimates were determined from boarding report surveys of boats fishing the public seed grounds and seed reservations. These data were compared with annual stock availabilities and previous production estimates calculated during the fiscal year.

CRABS

Louisiana commercial blue crab landings for 2009 totalled approximately 52.5 million pounds and had a dockside value of approximately \$37.2 million. Blue crab landings in 2009 represent an approximate 20 percent increase from 2008 landings of approximately 41.7 million pounds

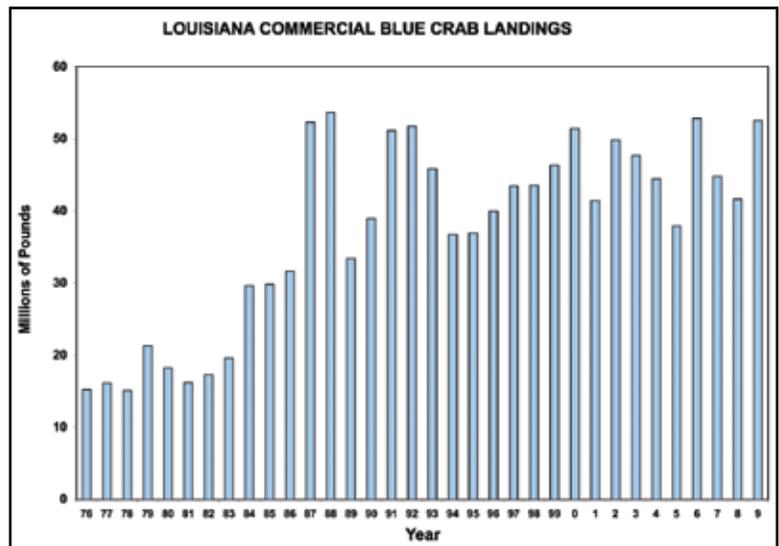


FIGURE 5. Louisiana Commercial Blue Crab Landings

(Figure 5). A major issue in the fishery remains the low prices associated with increased foreign imports of cheaply priced fresh and frozen crabmeat. In cooperation with the Louisiana Crab Task Force and the Louisiana Seafood Promotion and Marketing Board, LDWF has initiated processes to have the blue crab fishery certified as a sustainable fishery through the Marine Stewardship Council (MSC). Certification of the fishery has the potential to expand Louisiana blue crab products into new markets and increase value.

Stone crab landings for 2009 were 1,721 pounds valued at \$4,647 dockside. The stone crab fishery in Louisiana is not a directed fishery and stone crabs are primarily taken as incidental bycatch within the blue crab fishery. Variations in annual stone crab landings are primarily due to salinity levels with higher abundance associated with dry years and higher salinities.

The major department activity related to blue crabs in 2009-2010 was the removal of derelict crab traps from coastal waters under the Derelict Crab Trap Removal Program. Legislation introduced by LDWF in 2003 gave the Wildlife and Fisheries Commission the authority to establish a derelict crab trap removal program.

Funding for the 2010 crab trap clean up came from increases in recreational and commercial crab trap gear license fees statutorily dedicated to support the abandoned crab trap removal program. One winter trap closure and clean-up in portions of the Barataria Bay and Estuary was conducted in 2010.

The following portion of the Barataria Bay Estuary within that portion of Lafourche, Jefferson and Plaquemines parishes was closed to the use of crab traps over a 10-day period extending from 6:00 a.m. Feb. 27, 2010 through 6:00 a.m. March 8, 2010.

- From a point originating from the intersection of the Gulf Intracoastal Waterway and the northern shore-

TABLE 1. Derelict Crab Trap Program

YEAR	TRAPS	BOAT DAYS*
2004	6,894	90+
2005	4,623	51+
2006	2,935	31
2007	1,498	14
2008	1,234	3
2009	788	0
2004-2010	18,449	191+

*Public volunteers only

line of Hero Canal; thence due north to a point along the northern shoreline of the Gulf Intracoastal Waterway; thence southward and then westward along the northern shoreline of the Gulf Intracoastal Waterway to a point opposite the western shoreline of Bayou Perot; thence due south to the western shoreline of Bayou Perot; thence southward along the western shoreline of Bayou Perot to Little Lake; thence southward along the western shoreline of Little Lake to 29 degrees, 30 minutes, 00 seconds north latitude; thence eastward along 29 degrees, 30 minutes, 00 seconds north latitude to the eastern shoreline of Wilkinson Canal; thence northward along the eastern shoreline of Wilkinson Canal to its termination; thence due north to the western shore of the Mississippi River; thence northwestward along the western shore of the Mississippi River to a point due east of the northern shoreline of Hero Canal; thence due west to the northern shoreline of Hero Canal; thence westward along the northern shoreline of Hero Canal and terminating at its intersection with the Gulf Intracoastal Waterway.

A total of 477 abandoned crab traps were collected during the closure and clean-up in fiscal year 2009-2010. Six years of trap closures and trap cleanups have taken place under Louisiana's Derelict Crab Trap Removal Program. The number of retrieved crab traps can best evaluate the success of the program, although volunteer participation should also be considered. A total of 18,449 derelict crab traps have been removed from Louisiana through the program; however, volunteer effort has declined through the years resulting in only a single volunteer and no volunteer boats participating in the 2010 program.

The Louisiana Crab Task Force has continued to meet and address issues that confront the industry. Legislation supported by the task force and approved during the spring 2010 Louisiana Legislative Session now allows commercial fishermen to possess any finfish caught in crab traps up to the commercial possession limit allowable for such finfish. The Crab Task Force also continues discussions on a variety of topics such as certification of the Louisiana blue crab fishery under the MSC, effects of the Deepwater Horizon oil spill on the crab resource, fisheries disaster assistance, crab bait availability, impacts of crabmeat imports, and legislation impacting the crab industry.



FIGURE 6. Derelict Crab Trap Removal Program

With assistance from LDWF, the Crab Task Force hosted a "Crab Education Day" for members of the House Natural Resources and Environment Committee and the Senate Natural Resources Committee on Oct. 9, 2010. Committee members and staff were provided information on the blue crab fishery, challenges facing the industry, the role of the Louisiana Seafood Promotion and Marketing Board, and how the fishery is managed and regulated by LDWF. Members and staff boarded boats and observed how crab traps are set and retrieved, toured a crab processing facility, viewed crabs being graded for the live market and crabmeat processing, and toured a soft shell shedding facility.

SPECIAL BAIT DEALER PERMIT PROGRAM

In recent years, Louisiana saltwater anglers have shown increasing interest and demand for live bait, and the live bait fishery has grown to become an important industry in Louisiana. During the 2009 permit period, bait dealers reported sales of approximately 322,000 live croaker (*Micropogonias undulatus*) and two million live shrimp (*Farfantepenaeus aztecus* and *Litopenaeus setiferus*) with an estimated retail value of approximately \$479,000. Bait dealers in Jefferson Parish led all others in sales of live croaker and the number of bait trips reported, while those in St. Bernard Parish sold the most live shrimp. In January 2010, the Louisiana Wildlife and Fisheries Commission ratified a final rule which allows for the harvest and sale of live bait shrimp and live to the fishing public during closed shrimp season beginning May 1 of each year until the opening of the spring inshore shrimp season in addition to between the spring and fall shrimp seasons.

A total of 43 special bait dealer permits were issued to licensed wholesale/retail seafood dealers for the sale of live bait shrimp during 2009. Although the number of permitted dealers remain unchanged from the previous year, the number of live shrimp and live croaker harvested during the 2009 permit period represents an increase of approximately 23 percent from levels reported last year.

MOLLUSK MANAGEMENT

The Mollusk Program is responsible for the oyster resource on nearly 1.7 million acres of public oyster seed

reservations, public seed grounds and public oyster areas. Seed grounds are designated by the Wildlife and Fisheries Commission and include a large continuous area east of the Mississippi River, as well as areas of the Vermilion/Cote Blanche/Atchafalaya Bay system. Seed reservations and the public oyster areas of Calcasieu and Sabine lakes are designated by the legislature. LDWF manages four seed reservations, including one east of the Mississippi River (Bay Gardene), one in the Barataria Bay system (Hackberry Bay), and two in Terrebonne Parish (Sister Lake and Bay Junop).

Commercial oyster harvest in Louisiana is typically accomplished using large dredges (no greater than 6 feet wide) pulled behind oyster vessels called "luggers." Most of the commercial harvest from public oyster seed grounds occurs on the public grounds east of the Mississippi River in St. Bernard and Plaquemines parishes. Seed grounds and reservations are managed with the goal of providing seed oysters for transplant onto private oyster leases (Figure 7). However, two "sacking only areas" exist east of the Mississippi River for the exclusive harvest of sack-sized oysters;

- portions of Lake Fortuna and Lake Machias.
- American/Long Bay.

Mechanical dredge harvest in Calcasieu Lake mirrors the dredge harvest in other parts of the state with the exception of dredge size as Calcasieu dredges are limited to 36 inches width. On occasion, however, harvest in Calcasieu Lake is accomplished using traditional hand-tongs. Poor water quality has prohibited harvest in Sabine Lake for many years due to public health concerns, and all oyster harvest in the southwest portion of Louisiana comes from Calcasieu Lake.

These public oyster areas are utilized heavily by the commercial oyster industry, and periodic reef rehabilitation projects (cultch plants) help maintain the productivity of the public grounds. Two cultch planting projects were planned for May 2010, but had to be cancelled due to the BP Deepwater Horizon oil spill. The last cultch planting projects occurred in May 2009 and were located in Mississippi Sound (St. Bernard Parish), Black Bay (Plaquemines Parish), Lake Chien (Terrebonne Parish), Sister Lake (Terrebonne Parish) and Calcasieu Lake (Cameron Parish). Cultch planting provides settlement surfaces for the attachment of larval oysters by placing suitable hard material, such as oyster shells, limestone or crushed concrete, on the water bottoms (Figure 8).

Oysters provide an economic benefit to the state, and the ecological benefits of oyster reefs are very important as well. Oysters are biomonitors of the overall health of the ecosystem and provide forage and shelter habitat for a variety of fish and invertebrate species. Oysters also affect water quality through filter-feeding activities, affect estuarine current patterns, and may provide shoreline stabilization. Because oysters are so economically and ecologically important, wise management of the public oyster resource is critically important to ensure that this valuable species continues to thrive in Louisiana's coastal areas.

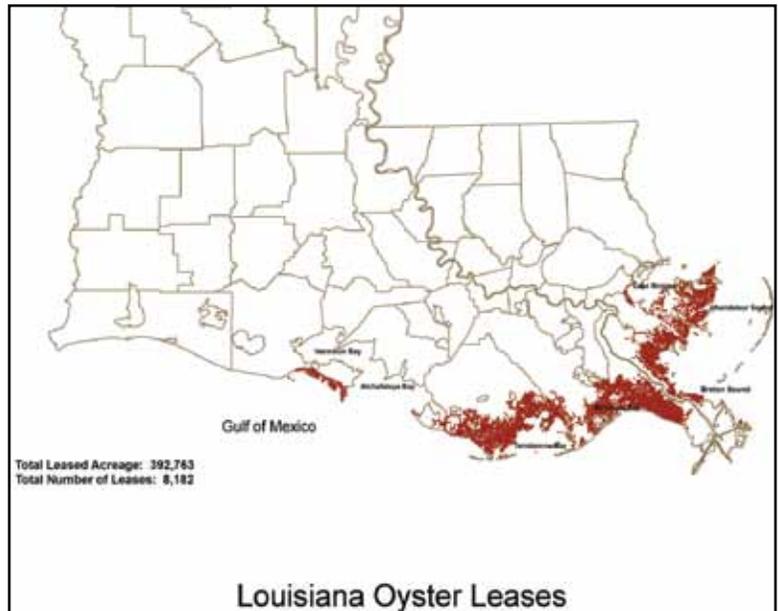


FIGURE 7. Louisiana Oyster Leases



FIGURE 8. Reef building activities in Black Bay, May 2009

State laws mandate that LDWF open the oyster season on Louisiana public seed grounds on the first Wednesday following Labor Day of each year and close these areas no later than April 30 of each year. However, the Louisiana Wildlife and Fisheries Commission is authorized to extend the season beyond April 30 provided sufficient stocks are available for harvest. The Secretary of LDWF may close seasons on an emergency basis if oyster mortality occurs, or delay the season or close areas where significant spat catch has occurred with good probability of survival, or if excessive amounts of shell in seed oyster loads occur. Management practices often use rotational openings of the four Oyster Seed Reservations in alternating years. A law change during the 2008 Louisiana Legislative Session requires that the public grounds only be opened to the taking of seed oysters only between the first Wednesday following Labor Day and the second Monday in October. The seed grounds can then also be opened to

the taking of market-size oysters on the second Monday in October, as well as for harvesting seed oysters.

Management of the public oyster grounds and reservations (Figure 9) relies heavily upon data gathered through a comprehensive biological monitoring program. This program provides quantitative and qualitative biological data on oyster populations and other reef-associated animals. Approximately 350 square-meter samples are collected each July, and nearly 700 dredge samples are collected from March through October. Square-meter data are collected using SCUBA and the data are used to measure the annual oyster stock size and for yearly oyster season recommendations by LDWF. Dredge data are used to monitor the overall health of the oyster resource during the year and to assess recruitment of new age classes of oysters into the population. Field biologists also gather hydrological data on public oyster areas and develop harvest and fishing effort estimates by conducting boarding report surveys of oyster boats.

Unequaled in oyster production over recent years, Louisiana regularly leads the nation in the production of oysters and accounted for an average of 34 percent of the nation's oyster landings from 1997-2009 (Figure 10). Among Gulf of Mexico states, Louisiana consistently ranks #1 in landings accounting for over 50 percent of all oysters landed.

Oysters have been a significant part of the Louisiana economy for many years and routinely have a total economic impact on the state's economy of roughly \$300 million. In 2009, the dockside value of oysters was the highest on record, totaling just under \$50 million and harvest yielded approximately 14.8 million pounds of meat (LDWF Trip Ticket Data). This valuable resource is harvested from a variety of locations from bays to bayous and throughout the coast of the state. In addition, oyster landings in Louisiana are divided between harvest from public oyster areas and private oyster leases.

Historically, landings from private leases have comprised 60 to 80 percent of annual Louisiana oyster landings, and in 2009 only 77 percent of all oysters harvested in Louisiana came from private leases. The public oyster grounds continue to significantly contribute to annual statewide oyster landings, as landings in 2009 measured nearly 3.5 million pounds of oyster meat (Figure 11). In addition, much of the oyster production from private leases is dependent upon small seed oysters (less than 3 inches) transplanted from the public grounds to the leases to be grown out for ultimate harvest at a legal and marketable size.

The oyster season on the public grounds generally runs from September to April (Table 2), but may be extended only after approval by the Louisiana Wildlife and Fisheries Commission. In 2009-2010, the oyster season opened in early September but was closed after only a short time to protect the fall reproductive event. In addition, low resource availability on the public oyster seed grounds and a general trend of declining oyster resources necessitated that the season not be reopened until Oct. 28, 2009.

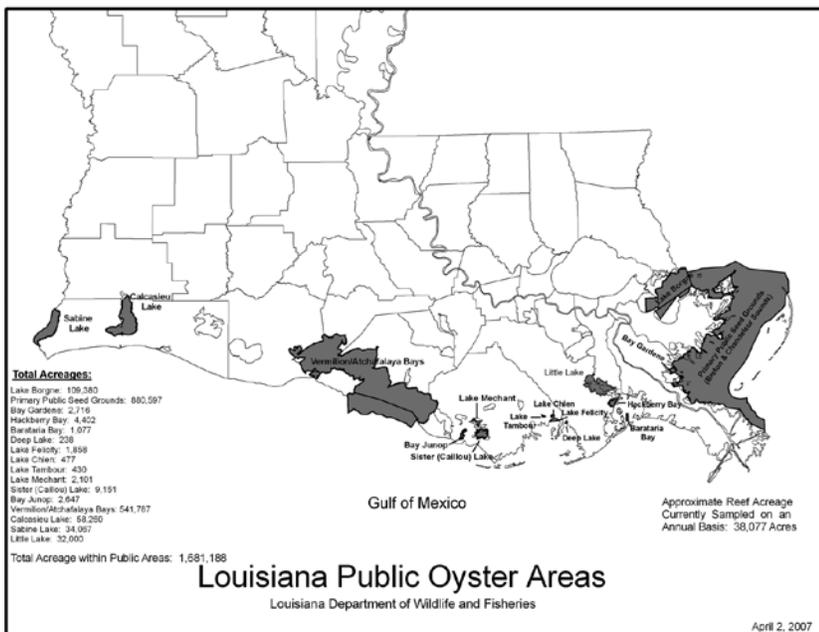


FIGURE 9. Louisiana Public Oyster Areas

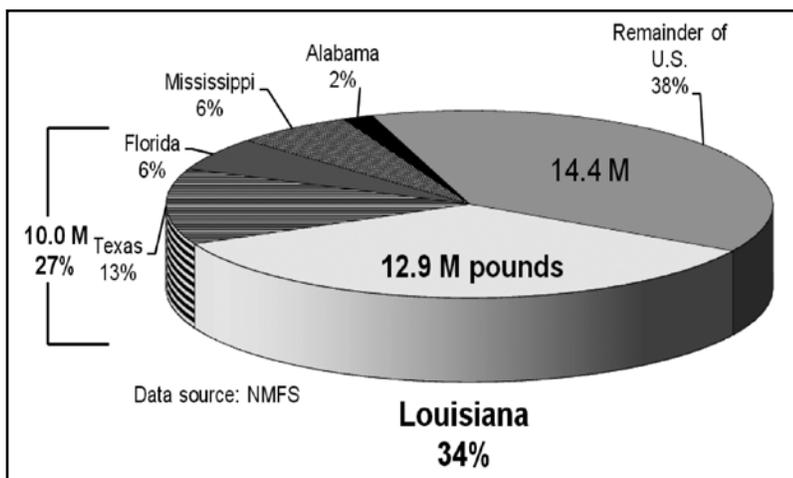


FIGURE 10. Average 1997-2009 oyster landings (all species combined, pounds of meat).

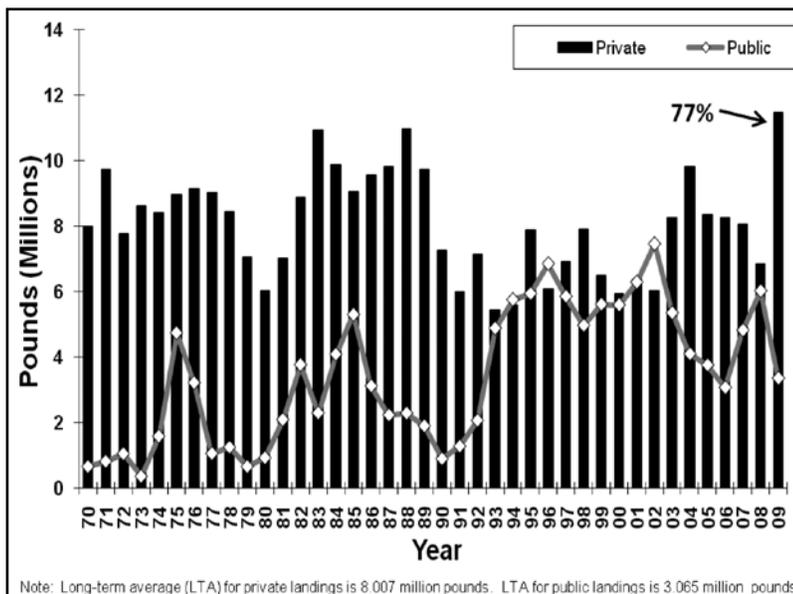


FIGURE 11. Historical Louisiana oyster landings (pounds of meat) divided between public grounds and private leases.

TABLE 2. 2008-2009 Oyster season dates

Public Oyster Areas	Season Opening	Season Closure
Primary Public Oyster Seed Grounds east of the Mississippi River, including Lake Borgne, and the Bay Gardene Public Oyster Seed Reservation	Sept. 9, 2009	Sept. 23, 2009
	Oct. 28, 2009	April 1, 2010
Hackberry Bay Public Oyster Seed Reservation	Oct. 28, 2009	Nov. 4, 2009
Little Lake Public Oyster Seed Grounds	Sept. 9, 2009	Sept. 23, 2009
	Oct. 28, 2009	April 1, 2010
Barataria Bay Public Oyster Seed Grounds	Sept. 9, 2009	Sept. 30, 2009
Sister Lake Public Oyster Seed Reservation	Oct. 30, 2009	Nov. 12, 2009
Vermilion/East and West Cote Blanche/Atchafalaya Bay Public Oyster Seed Grounds	Sept. 9, 2009	Oct. 11, 2009
	Oct. 12, 2009	April 30, 2010
Calcasieu Lake public oyster area except within cultch plant within some coordinates	Oct. 15, 2009	April 30, 2010
Deep Lake, Lake Tambour, Lake Chien, Lake Felicity, Lake Mechant, Bay Junop, and Sabine Lake	season remained closed	

Despite the shorter oyster season, it was estimated that approximately 390,000 barrels of oysters were harvested from the public oyster seed grounds during the 2009-2010 oyster season.

In 2009, the annual stock assessment report (July 2009) estimated that nearly 1.2 million barrels of oysters (both seed and sack combined) were available on the public oyster grounds throughout the state. This represented a significant decrease of just over 46 percent from 2008 levels (Figure 12). This decrease represented a drop in total oyster availability of approximately 1 million barrels of oysters over 2008 levels and the lowest statewide oyster stock assessment since 1989. Seed stocks (oysters 1 inch to <3 inches) dropped approximately 30 percent from 798,285 barrels in 2008 to 558,916 barrels in 2009.

Market-size oysters (≥ 3 inches) also suffered extensive decreases in availability, dropping over 51 percent in 2009 as compared to 2008 levels. Although nearly 1.4 million barrels of market-size oysters were available in 2008, levels plunged to only 610,848 barrels in 2009. The primary public oyster seed grounds east of the Mississippi River showed a very slim resource entering the 2009-2010 oyster season with an estimated market-size oyster availability of only 256,547 barrels. Calcasieu Lake again held a significant portion of the statewide market-size oyster stock with approximately 310,503 barrels of oysters available.

Additional Mollusc Program Projects

Side-Scan Sonar and Water Bottom Assessments

A side-scan sonar and water bottom assessment of selected portions of Mississippi Sound to assist with both shrimp and oyster management programs was completed

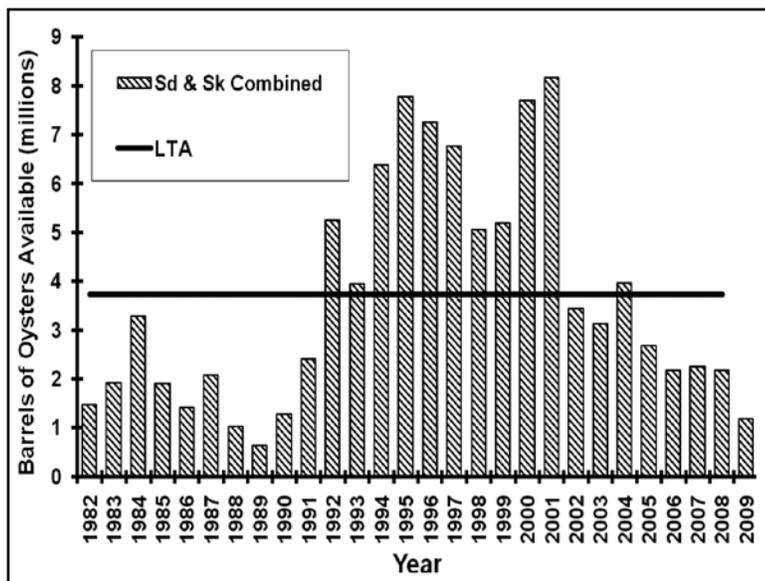


FIGURE 12. Annual oyster stock size on the public oyster grounds as estimated from biological sampling.

during fiscal year 2009-2010. This project was funded by the federal Southeast Area Monitoring and Assessment Program (SEAMAP) and has provided critical habitat mapping and bathymetry information for fisheries management purposes.

Plans were developed to side-scan selected portions of the public oyster seed grounds in the Breton Sound basin. A contract will be executed during fiscal year 2010-2011 to provide a water bottom assessment of this area via side-scan sonar.

Administration of Public Oyster Seed Ground Vessel Permit and Vessel Permit Appeals Board

An Oyster Seed Ground Vessel Permit is now required on any vessel harvesting oysters from the public oyster seed grounds and reservations, excluding Calcasieu and Sabine lakes. Qualifying criteria exists in order to obtain the permit, thus establishing a limited entry program for the public oyster seed grounds. The deadline for applying for the permit was Dec. 31, 2009. Although LDWF Licensing issues these permits, it takes a concerted effort of the LDWF Licensing, Legal and Marine Fisheries staff to review and qualify vessel owners for these permits. For those vessel owners who are denied a permit by LDWF, a Seed Ground Vessel Permit Appeals Board exists to hear appeals of denied permits. The Oyster Program staff planned, coordinated and oversaw the Seed Ground Vessel Permit Appeals Board. The Appeals Board held eight meetings during fiscal year 2009-2010 and heard approximately 20 appeal cases during those meetings.

FINFISH MANAGEMENT

The primary objective of the finfish program is to make rational recommendations for the management of coastal finfish stocks based on a database of scientific information. The information in the database is collected through fishery independent and fishery dependent sampling. These programs are cooperative with NOAA Fisheries

and the GSMFC. The fishery independent monitoring program is an ongoing collection of data by LDWF biologists in the field conducting surveys designed to sample coastal waters in an objective manner. Such surveys collect information based on geographic ranges independent of commercial or recreational fishing operations. The Marine Fisheries Division fishery dependent monitoring program collects information from fishers, processors and observers based on methods developed by the National Marine Fisheries Service for similar programs.

Fishery Independent Monitoring

A comprehensive monitoring program was developed in 1985 to protect or enhance these valuable resources by providing information regarding the status of fish stocks that occur in the coastal waters of Louisiana at some time during their life cycle. Three gear types are used coast wide to sample various year classes of estuarine dependent fish.

A bag seine is used to sample young of the year and provide information on growth and movement. A gill net is used to sample juvenile, sub-adult and adult fish and provides information on relative abundance, year class strength, movement and gonad condition. A trammel net is used to provide information on relative abundance, standing crop and movement. Gill net samples are collected semi-monthly from April through September, and monthly from October through March using a strike net technique. The gill nets are set in a crescent shape, open towards the shoreline and then circled several times by the sampling boat, driving those animals present into the net. Trammel net samples are taken monthly from October through March. Seine samples are taken monthly from January through August, and semi-monthly from September through December. Hydrological data (conductivity, salinity and water temperature) are collected with each biological sample, as are wind direction and speed. Samples are collected at specific locations arranged in such a manner so as to cover the beach, mid-marsh and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each Coastal Study Area on a monthly basis to give resource managers information on the current condition of the resource. The pertinent life history information for the important species is also used in developing analytical and predictive models. During fiscal year 2009-2010, 645 (91 percent) seine samples, 786 (97 percent) gill net samples and 252 (99 percent) trammel net samples were completed for a 96 percent completion rate. The lower than 100 percent completion rate was due, in large part, to oiling of sampling locations and oil spill response activities in the latter half of fiscal year 2009-2010.

Management recommendations based upon these observations and other information are listed.

2009-2010 Finfish Management Actions, Impacts and Recommendations

July 2009

- Commercial king mackerel season opened on July 1, 2009 at 12:01 a.m.

August 2009

- Recreational red snapper season closes on Aug. 15, 2009 at 12:01 a.m.

September 2009

- Commercial king mackerel season closes on Sept. 12, 2009 at 12:00 p.m.

October 2009

- Rule to require non-stainless circle hooks when fishing for reef fish with natural baits. De-hooking devices and venting tools to be available on vessels fishing for reef fish effective on Oct. 20, 2009.

November 2009

- Commercial greater amberjack season closes on Nov. 7, 2009 at 12:01 a.m.

January 2010

- Secretary provided with authority to close commercial seasons of reef fishes if quota for species group is filled in federal waters.
- Secretary provided with authority to close recreational seasons of reef fishes if quota for species group is filled in federal waters.
- Set 2011 king mackerel commercial season, provide Secretary with authority to close commercial season for king mackerel if quota for species is filled in federal waters.
- Commercial fishery for greater amberjack re-opens Jan. 1, 2010.

February 2010

- Present 2009 stock assessment for striped mullet to Commission and Legislature
- Commercial season for large coastal shark opens on Feb. 4, 2010 at 12:01 a.m.

March 2010

- Issued Notice of Intent to require Individual Fishing Quota vessel account have been issued and be on board for any vessel to possess or land red snapper, any species of grouper or any tilefish species regardless of where harvested or possessed. Sets requirements for a Vessel Monitoring System and removes closed season for harvest of gag, black and red grouper so as to be compatible with federal seasons.
- Commercial season for large coastal shark closed on March 17, 2010 at 11:30pm.

April 2010

- Recreational and commercial shark seasons closed from April 1, 2010 at 12:01 a.m. until June 30, 2010.
- Issued Notice of Intent to modify the commercial harvest rules for groupers and tilefish and to modify

recreational bag limits for red grouper, gag grouper and groupers in general for consistency with federal regulations

May 2010

- Commercial fisheries for deepwater groupers and tilefishes closed at 12:01 a.m.

June 2010

- Commercial large coastal shark season closed in state waters. Had been closed on April 1, 2010, but this action continued closure until 2011 season opens.

The Programs on Fishery Management interact with other department, state, regional and national issues. The program contributes to the Gulf and Atlantic Aquatic Invasive Species Task Force that engenders cooperation on these issues for states from South Carolina to Texas and Mexico. It is also part of the Louisiana Aquatic Invasive Species Task Force. It works with the Gulf of Mexico Fishery Management Council Stock Assessment Panel to evaluate the status of fish stocks managed by the Council. It works with the GSMFC to develop fishery management plans and stock assessments for state-managed fisheries that have inter-jurisdictional management considerations. The program also contributes to LDWF consideration on permitting issues that relate to finfish including:

- Coastal Use Permits
- Liquefied Natural Gas Terminals
- Mariculture
- Artificial Reefs
- Fishery Dependent Monitoring
- Finfish Stock Assessment
- SEAMAP

FEDERAL AID IN SPORT FISH RESTORATION

The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson Act, passed on Aug. 9, 1950, and was modeled after the Pittman-Robertson Act to create a parallel program for management, conservation and restoration of fishery resources. The SFR program is funded by revenues collected from the manufacturers of fishing rods, reels, lures, flies and artificial baits, who pay an excise tax on these items to the U.S. Treasury. An amendment to the Act in 1984 (Wallop-Breaux Amendment) added new provisions by extending the excise tax to previously untaxed items of sport fishing equipment.

Appropriate state agencies are the only entities eligible to receive grant funds. Each state's share is based 60 percent on its licensed anglers (fishermen) and 40 percent on its land and water area. No state receives more than 5 percent or less than 1 percent of each year's total apportionment. The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source. During fiscal year 2009-2010, Louisiana used the marine share of its SFR funds in support of the following projects:

STOCK ASSESSMENT OF LOUISIANA'S IMPORTANT MARINE FINFISHES, F-97

High quality data for the stock assessment for various species are essential for making management decisions. This project will determine the spawning ratio of the major recreational saltwater finfish in order to comply with legislative mandates that regulatory action be taken when the Spawning Potential Ratio falls below 30 percent. The goal is to ensure that the stocks of these finfish are not over-fished. The spawning potential ratio will be determined using age, growth and fecundity. LSU will assist with the analysis of samples. Marine Fisheries sampling crews obtain otoliths from important marine fish. Additional work is added as needed to address age, growth and reproductive biology of selected finfishes to support stock assessment efforts. This project started on July 1, 1999 and is an ongoing project. As of June 30, 2009, approximately 44 formal stock assessment reports have been completed as a result of this project.

EVALUATING SPORT FISH USE OF CREATED WETLANDS IN THE ATCHAFALAYA DELTA PROJECT (CONTRACTED TO LSU) F-107

The objective of this project is to evaluate the sport fish use of submerged aquatic vegetation and mudflat habitats in the Atchafalaya Delta. During this year, sampling equipment was tested and developed and sampling sites were identified in the spring due to Hurricanes Gustav and Ike causing the submerged aquatic vegetation to die. It was determined that the most efficient method of sampling the submerged aquatic vegetation beds is timed electrofishing transects. Sampling continued into the second year of this project.

CONTINUATION OF IDENTIFYING ESSENTIAL FISH HABITATS IN BARATARIA BAY PROJECT (JOINT PROJECT WITH LSU) F-106

The objective of this project is to develop a better understanding of the relationship between wetlands habitats and fisheries productivity in Louisiana, and the efforts to maintain and restore both. Several studies have been performed to help achieve this objective including a Before-After-Control-Impact study with data collected by LDWF in Breton Sound, Mean Trophic Level Index in the Gulf of Mexico, multivariate analyses relating nekton biomass distributions to habitat characteristics, DIDSON hydro-acoustic data analysis, and tissue analyses of samples collected during fieldtrips on caloric content, isotopes and stomach content, and to model the effect of the diversion using Ecopath with Ecosim software.

MARINE SPORT FISH TAGGING STUDY (JOINT PROJECT WITH LSU) F-124

This three-year project will develop an alternative estimate of red drum escapement through a tagging study utilizing a diverse partnership among fisheries scientists and volunteer anglers. Angler education is an important component of this project. LSU is a funding and research cooperator. This project was continued to June 30, 2010.

SPORT FISH UTILIZATION OF ARTIFICIAL REEFS VS. OPEN WATER HABITATS (JOINT PROJECT WITH LSU) F-130-DR

This project allows LDWF to evaluate the effectiveness of habitat alteration and enhancement on fish communities through the construction of artificial reefs. Evaluating fish response to artificial reefs will give LDWF insight in making management decisions concerning habitat alteration and enhancement. Artificial reefs in Louisiana are currently made out of materials such as concrete, limestone, shells and oil platforms.

FISHERIES AND HABITAT ASSESSMENT OF BAYOU ST. JOHN, RESTORING A HISTORIC URBAN SPORT FISHERY (JOINT PROJECT WITH UNO AND NEW ORLEANS CITY PARK) F-131-R

City Park is a public park located in the heart of New Orleans. It features two historical waterways and a set of manmade lagoons that connect to Lake Pontchartrain. Bayou St. John, Bayou Metairie and the lagoons have an estuarine influence, yet are still fresh enough to harbor freshwater fishes. The objectives of this project are to re-establishing water flow through the Bayou St. John complex to improve water quality, improving fisheries habitat through plantings and shoreline alteration and determine habitat utilization by sport fish. Preliminary analysis indicates that the sonic-tagged red drum reintroduced to the system avoid the southern portion of Bayou St. John and are associated with an opening or moving water in areas closer to Lake Pontchartrain. Also, City Park conducted a shoreline planting projects for fisheries habitat improvement and purchased a water quality monitoring system.

RAPID RESPONSE TO REMOVE INTRODUCED TILAPIA

An established tilapia population (*Oreochromis spp.*) was discovered in a private pond in the Port Sulfur area during the winter of 2008 by LDWF Fisheries biologists. Tilapia are considered cold water intolerant, and it was expected that the fish could not survive the winter months. However, spring sampling revealed that the fish did indeed survive the mild winter. In fact, they had spread to both private and public waters throughout the Port Sulfur area.

Tilapia reproduce several times a year and are mouth brooders, providing parental protection for their young through the early stages of the life cycle. If left uncontrolled, they can overpopulate a system and create competition for native fish. Although tilapia feed primarily on organic material and "muck," they build large nests and compete with native fishes for spawning grounds. Tilapia are successful invaders because of their ability to adapt to undesirable conditions. Louisiana law RS 56:319 makes it illegal to possess, sell or cause to be transported into this state any species of tilapia without first obtaining the written permission of the Secretary of LDWF.

LDWF initiated a rapid response effort to contain the movement of tilapia, understand the extent of the introduction, and develop an eradication effort. A variety of sampling gear, including cast nets, rotenone, lead nets and

electrofishing equipment, were utilized to sample fish at over 100 sites to determine the presence or absence of tilapia. This information was used to delineate the area where tilapia were found, and subsequently the Secretary of LDWF closed these areas to all fishing on May 5, 2009. The closed area in Port Sulfur included all public and private waters within a four-mile zone from St. Jude Road to Milan Drive and between the Mississippi River levee and the drainage ditch levee on the marsh side.

The rapid response was organized utilizing an Incident Action Plan format that identified tasks, personnel and logistics for eradicating all fish within the containment zone using rotenone. Approximately 596 acre-feet of water (81 surface acres) was treated with a total of 2,260 gallons of 5 percent rotenone over a seven week period. Participants in the effort included over 100 individuals representing state and federal agencies, universities, environmental organizations, interested individuals and Plaquemines Parish.

Post monitoring on Aug. 27, 2009, indicated that all fish in the containment zone were eliminated. The final phase of the Incident Action Plan included stocking several predatory fish species including spotted gar (*Lepisosteus oculatus*), bowfin (*Amia calva*), largemouth bass (*Micropterus salmoides*), flathead catfish (*Pylodictis olivaris*) and sunfish (*Lepomis spp.*). The department has contracted with the University of New Orleans and Nichols State University to conduct future monitoring on a quarterly basis for the next two years within the containment zone.

FISHERIES RESEARCH LAB

On June 30, 2009, LDWF opened the Fisheries Research Laboratory on Grand Isle, and staff moved into the new facility. The Fisheries Research Lab has a primary mission to conduct the research required to manage Louisiana's marine, estuarine and freshwater fisheries. The laboratory is made available for use by other LDWF and non-LDWF entities engaged in fisheries research, management, enforcement, coastal restoration and marine education, and serves as a station for Coastal Study Area III in the Barataria Bay estuarine system. The marine laboratory also supports the monitoring of the Freeport Sulfur Mine Reef for the LARP, Elmer's Island Wildlife Management Area, and a local operations center for LDWF Enforcement Agents.

HABITAT PROTECTION PROGRAMS

Habitat protection programs include: Elmer's Island; David Pond Monitoring Program; finfish management; shellfish management; oyster management; sea turtle and marine mammal stranding program; Freeport Sulfur Mine Reef; and the Sport Fish Tagging Program.

Elmer's Island

LDWF was able to work with LDOTD to make road improvements to allow easier public access to the beach front property. This property is managed by fisheries research lab employees. The area is also used for education events. Students have been able to learn about marsh

plant ecology by planting grass on the beach to improve stability and prevent erosion of the beach. Biologists routinely check the beach for turtle and marine mammal strandings, as well as fish kills. In addition, biologists complete MRFSS creel surveys at Elmer's Island Beach. Access to Elmer's Island Beach was closed to the public in May 2010 due to the BP 252 Deepwater Horizon oil spill. BP took over the area to conduct oil spill clean-up operations. Access has not been restored at this point.

Davis Pond Monitoring Program

Personnel collect biological and physical data to be used for monitoring the effects of the Davis Pond Water Diversion. These samples include finfish, shellfish, isohaline, creel and Nestier Tray data. These duties were transferred to Coastal Study Area 3 during early 2010 to allow Lab staff to shift their duties towards research.

Finfish Management

Fisheries lab personnel assist Coastal Study Area III (Marine Fisheries Section) with fishery dependent and independent data collection. Independent data is collected with the department's standardized sampling. Lab personnel sample coastal species with seines at four locations, gill nets at six locations and trammel nets at six locations. These samples are taken at various rates (weekly, biweekly, monthly, etc.) during different times of the year. In addition to these standard samples, biologists collect data for a coastal fecundity study on spotted seatrout. Dependent data is collected with the use of MRFSS, Davis Pond Creel surveys and otolith for biostatistical information. These duties were transferred to Coastal Study Area 3 during early 2010 to allow lab staff to shift their duties towards research.

Shellfish Management

Fisheries Research Lab personnel assisted Coastal Study Area III with the collection of 16-foot and 6-foot trawl samples conducted with the department's standardized methodology. Sixteen-foot trawls are used to sample four inshore sites and four offshore sites. Biologists use 6-foot trawls to sample 10 shallow water locations. These duties were transferred to Coastal Study Area 3 during early 2010 to allow lab staff to shift their duties towards research.

Mollusc Management

Lab personnel assist Coastal Study Area III with monitoring the oyster boats involved in the POLR program and collecting oyster fisherman production data in the Boarding Run survey. Biologists also sample five dredge sites, one cultch reef site and a Bay Ronquille reef site. These duties were transferred to Coastal Study Area 3 during early 2010 to allow lab staff to shift their duties towards research.

Sea Turtle and Marine Mammal Stranding Program

Lab staff are charged with monitoring the beaches and marshes in the vicinity of Grand Isle for dead or live stranded dolphins or sea turtles. Dead turtles or dolphins are located and identified, and a report is sent to the state

marine mammal coordinator in Baton Rouge. Live organisms are monitored and experts are called in to rescue and rehabilitate them for later release back into the wild. Beaches in the area are frequently monitored by staff to locate any turtles or dolphins that have washed ashore.

Bay Water Quality Samples

Lab personnel collect weekly water quality data in Bayou Rigaud on the bay-side of Grand Isle. This data is collected to assess areas for oyster production potential. This sampling ended in January 2010.

Sport Fish Tagging Program

The lab also participates in the Sport Fish Tagging Program. Lab personnel are responsible for tagging spotted seatrout and red drum.

Fish Kills

Biologists investigate fish kills near Grand Isle. Public calls or biologist observations require collection of water quality data and fish mortality information.

OTHER PROJECTS

The Fisheries Research Lab is available to team up with researchers for other organizations and universities to conduct research that would serve to enhance the state's fisheries resources, both inshore and offshore. The lab can provide personnel and facilities for various research projects. Laboratory staff are also able to collaborate with visiting professors on various scientific objectives.

LSU Bivalve Hatchery

The Grand Isle Bivalve Hatchery, led by Dr. John Supan, conducts many important experiments for the oyster fishery in the Gulf of Mexico. The hatchery is responsible for trying to develop disease resistant stocks for distributing to oyster leases, produce oyster larvae for seeding on leases and test innovative grow-out techniques. The scientists working on this project use lab space at the Fisheries Research Lab.

Southeast Area Monitoring and Assessment Program

SEAMAP is a cooperative state, federal and university program for collecting, managing and disseminating fishery-independent biological and environmental data and information in the southeastern United States. Fishery-independent data are those collected by fisheries scientists, rather than fishermen. SEAMAP collects data on fish stocks that are managed jointly by the states and federal government and conducts a variety of data collection activities including a Fall Shrimp/Groundfish Survey, Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey and other plankton and environmental surveys.

LDWF collects samples between Southwest Pass of the Mississippi River and Pointe au Fer, and out to the 120-foot depth contour off the Louisiana coast. Louisiana SEAMAP activities include spring (March-April), summer (June-July), autumn (September-October) and winter (December-January) trawl surveys that also collect zooplankton and environmental resource data.

Biological samples are collected using a SEAMAP standard 42-foot trawl to collect juvenile and adult animals. Approximately 30 stations are sampled to measure the different animal communities that are present. Plankton nets are used during daylight hours to sample early life history stages (eggs and larvae) of marine organisms. Environmental data are collected at all stations.

Data from all sample cruises, including real-time shrimp and red snapper data from the summer cruise, are entered, verified and uploaded to the SEAMAP data management system.

Environmental Protection Agency's Environmental Monitoring and Assessment Program (EMAP)

Lab biologists collect data for EMAP, which is a program within the Environmental Protection Agency. EMAP provides quantitative assessment of the regional extent of environmental problems measuring status and change in selected indicators of ecological condition. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale.

Fish tissue, sediment, environmental and water samples were taken at each of 97 sites covering all of coastal Louisiana. Sampling took place from May to September 2010 as part of a nationwide coastal program. During project coordination, the MC252 BP Deepwater Horizon Oil Spill occurred. Environmental Protection Agency sampling was completed on time despite concurrent oil spill monitoring operations.

MC 252 BP Deepwater Horizon Oil Spill

The Fisheries Research Lab personnel were responsible for determining actual locations and relative amounts of inshore and offshore oil occurrences which provided valuable information for the Secretary and Assistant Secretary to determine recreational and commercial fishery closures. Lab staff created offshore and inshore sampling schemes to monitor oil movements and intrusions. Lab staff created beach monitoring at Grand Isle, Elmer's Island, Grand Terre and Fourchon to verify oil occurrences as well as dolphin and sea turtle strandings. Fisheries Research Lab personnel coordinated with hundreds of media personnel to cover effects of the spill and actual oil spill monitoring operations. Fisheries Research Lab biologists investigated fish kills throughout coastal Louisiana. Public calls or biologist observations required collection of water quality data and fish mortality information. Biologists also responded to dolphin, whale, and sea turtle stranding calls throughout coastal Louisiana.

The Fisheries Research Lab opened its doors to many state and federal agencies during the BP Oil Spill crisis. The agencies included:

- Wildlife and Fisheries - Wildlife Division
- LDWF Enforcement
- U.S. Fish and Wildlife Service
- Environmental Protection Agency
- NOAA

- National Marine Fisheries Service
- National Guard
- Bird Rehabilitation (Tri-State)
- Numerous Universities
- Overnight visiting personnel numbered up to 100 individuals on given nights and averaged approximately 60 which stretched Fisheries Research Lab bathroom and kitchen facilities.

Working with the Office of Fisheries, Fisheries Research Lab personnel collected shrimp, crabs and finfish tissue samples following a strict protocol developed by the Food and Drug Administration and NOAA. Samples were forwarded to the Pascagoula NOAA lab for further testing. Results from tissue samples provided necessary information the Secretary needed to determine recreational and commercial fishery openings.

ADDITIONAL RESEARCH PROJECTS

The Fisheries Research Lab was also involved in planning numerous projects for future work at the laboratory. These projects include:

Vertical Line Fisheries

Maps the spatial and temporal distribution of commercially and recreationally important reef species through monthly sampling of sites using commercial and recreational gear from the mouth of the Mississippi River to the south of Terrebonne Parish. Hook selectivity study is part of this project.

Near Shore 5-40 Monitoring

Modeled after SEAMAP but with no plankton tows fishery independent sampling and CTD water parameters cover depths up to 40 fathoms across the entire state.

Red Drum Age and Growth

Working with the Miami Science Center offshore stock assessments are made through collections of fishes throughout the Louisiana territorial sea and EEZ. Fisheries Research Lab personnel collect biological parameters and samples including reproductive organs and otoliths which are cut and aged.

Tarpon DNA

This is a tagging program partnered with Florida Wildlife Commission. Anglers are requested to participate in collecting DNA samples from tarpon prior to their release. Individual markers will be identified and fish can be traced if recaptured.

Biodiversity and Relative Abundance of Fish at Artificial Reefs and Corresponding Upright Oil Platforms

This project incorporates video, hook and line, and diving to record populations in a quarterly sampling scheme at selected sites to determine spatial and temporal distribution of fishes. Sampling will determine which fish species are resident versus transient at these artificial reef sites.

Grey Snapper

Project involves age and growth for assessment purposes. Fecundity at age, diet and migration will all be determined through otolith, stomach and gonad analysis and tagging.

Green Stick By-Catch

This study is to determine the by-catch in the green stick fishery and the feasibility of switching pelagic long line tuna gear to green stick gear. The basis is the proposed reduction in by-catch of turtles, birds, bluefin tuna and billfish. By-catch will be released and a sample will have PSAT tags attached.

Amberjack

Fisheries Research Lab personnel will be working with the University of Florida on a life history project for the greater amberjack. Length, weight and otolith will be collected from the specimens to determine an age to growth curve in Louisiana's greater amberjack population. Gut content analysis along with fecundity measurements will be taken. Anchor tags will be used to map the migration of the fish.

Research Hatchery

A series of tank systems are in the process of being installed at the Fisheries Research Lab. There will be closed and open systems that can be manipulated on many different parameters for future research projects. With the closed system we will be able to test groups of species under various conditions. This will allow us to determine which conditions provide the highest output for the species in question. The tanks will also be used as holding facilities for numerous other projects from tag retention to growth studies. In addition, we will have a micro-hatchery to raise forage for the fry in the hatchery. The micro-hatchery will grow algae, rotifers, artemia and other micro-organisms to feed developing organisms in the research systems.

STOCK ASSESSMENT

The following projects and activities were conducted during fiscal year 2009-2010 by the Fisheries Management Section's Stock Assessment group.

INLAND FISHERIES RESEARCH & ASSESSMENT

1. Continue centralized A&G processing of freshwater sportfish otoliths (i.e., largemouth bass, white and black crappie) to support planned stock assessments (under direction of Joe West)
2. Stock assessment of largemouth bass in Louisiana waters
 - Project is ongoing with primary research completed in 2012 (under direction of Joe West)
3. Stock assessment of crappie in Louisiana waters
 - Project is ongoing with primary research completed in 2012 (under direction of Joe West)
 - Preliminary results were used in ongoing standardization of harvest regulations on Texas and Louisiana border waters.

4. Continue technical support and data analysis/requests for the Inland Fisheries Section's ongoing research projects and standardized sampling program
5. Age and growth of spotted bass (*Micropterus punctulatus*) in the Lake Pontchartrain Basin
 - Collected approximately 150 spotted bass using rod-and-reel gear and seines from the Tangipohoa, Tickfaw, Tchefuncte, and Amite River drainages. Data collected included stomach contents, length, weight, sex and maturity. Otoliths were removed for age, growth and mortality estimates.
6. Manuscripts published in peer-reviewed scientific journals:
 - Alford, J. B., D. M. O'Keefe, and D. C. Jackson. 2009. Effects of stocking adult largemouth bass to enhance fisheries recovery in Pascagoula River floodplain lakes impacted by Hurricane Katrina. *Proceedings of the 63rd Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 63:104-110.
 - Alford, J. B. and D. C. Jackson. 2010. Associations between watershed characteristics and angling success for sport fishes in Mississippi wadeable streams. *North American Journal of Fisheries Management* 30:112-120.
7. Jenkins, J. A., S. B. Hartley, J. Carter, D. J. Johnson, and J. B. Alford. A geographic information system tool for aquatic resource conservation: Red and Sabine River watersheds. Manuscript in review in the journal *River Research and Applications*.
 - Co-authored with personnel from U.S. Geological Survey Wetlands Research Center in Lafayette. Watershed scale analysis of land use impacts to mercury concentration in bass (*Micropterus spp.*) and bowfin (*Amia calva*). Identified priority sub-watersheds for conservation relative to species of special concern.
8. Alford, J. B. and M. Walker. Flood duration and magnitude in the Atchafalaya River Basin and implications for fisheries management at a basin-wide scale. Manuscript will be submitted to the journal *River Research and Applications*. Developed models to predict the number of flood days required at Butte La Rose and how much river discharge is necessary at Simmesport to optimize recreational and commercial fish catches and growth of fish in the Atchafalaya River Basin.
9. Fish community analysis of Davis Pond data for streamlining purposes to see if stations and samples can be reduced yet still accurately assess fish community characteristics. Met with the Office of Coastal Protection and Restoration to discuss dropping of rotenone and hoop net samples, as well as some creel samples, in order to save department money while keeping statistical rigor. (Brian Alford and Joe West)

10. Fish assemblage of the Lake Pontchartrain Basin with emphasis on the broadstripe topminnow (*Fundulus euryzonus*), which is listed as a species of special concern in Louisiana.
 - Sampled water quality, habitat and fish species using seines from approximately 30 stream sites in the Tickfaw and Tchefuncte River drainages. Reference collection of fish species of the basin was maintained. Data on broadstripe topminnows included length, weight and sex.
 - This project is being funded by an award from the State Wildlife Grants program (\$26,000 over two years). An annual progress report was submitted to the State Wildlife Grants coordinator, LeAnne Bonner on 9/30/10. Brian Alford is the principal investigator.
11. Analysis of special research projects for Inland Division's district supervisors
 - District 7: Analyzed channel catfish (*Ictalurus punctatus*) maturity data from Lac Des Allemands.
 - District 10: Analyzed channel catfish (*Ictalurus punctatus*) maturity data from Toledo Bend Reservoir.
 - District 3: Analyzed lead net soak duration data in order to determine how to best sample crappie (*Pomoxis spp.*)
 - District 2: Estimated angler exploitation of crappie in Poverty Point Reservoir.
 - District 1: Compared the crappie sampling efficiency of Inland's lead net gear to their frame net gear.
12. Managed data for the Inland Division standardized sampling program and stocking databases by processing data requests, and making data corrections and edits.
13. Reviewed and critiqued all water body management plans generated by district biologist managers.
14. Developed creel survey sample schedules for Inland district biologist managers at various water bodies.
4. Continue technical support and data analysis/requests for the Marine Fisheries Section's ongoing research projects and standardized sampling program
5. Contract Work:
 - Sable, S., J. B. Alford, and S. Bartell. 2010. Aquatic statistical analysis for the USACE Mississippi River-Gulf Outlet draft environmental impact statement. U.S. Army Corps of Engineers.
 - Analyzed nekton community structure from LDWF fishery-independent samples taken 1988-2009 in water bodies surrounding the MRGO, also analyzed changes to fish community after Hurricane Katrina.
 - Project completion report submitted March 2010
6. Grant proposals written/awarded:
 - Tumlin, M. and J. B. Alford. 2010. Distribution and habitat utilization by Kemp's Ridley sea turtles (*Lepidochelys kempii*) in Louisiana. U.S. Fish and Wildlife Service/Louisiana State Wildlife Grant. Duration: July 1, 2010-June 30, 2011. \$33,000. Role: Lead author of grant.
 - Project was cancelled due to oil spill responsibilities and potential bias created by oil in Gulf
 - Alford, J. B., H. Warner-Finley, and R. Bourgeois. 2010. Restoration of seagrass habitat in Louisiana estuaries following the BP Deepwater Horizon oil spill in the Gulf of Mexico. Submitted to the Southeastern Aquatic Resources Partnership. Requested \$340,510 over four years.
 - Grant not awarded.
 - Alford, J. B., P. Banks, and T. Lindsey. 2010. Restoration of oyster reef habitat in the Calcasieu Estuary following the BP Deepwater Horizon oil spill in the Gulf of Mexico. Submitted to the Southeastern Aquatic Resources Partnership. Requested \$990,000 over three years.
 - Grant not awarded.
7. MC-252 DWH Oil Spill: April – July 2010. Designed the new randomized stratified sampling protocol for Marine Division, and wrote the manuals for the new inshore and nearshore fisheries monitoring plans. (Brian Alford and Ronald Lachica)
8. Developed models to estimate amount of Brown shrimp landings and value lost due to fishery closures using LDWF physicochemical and fishery-independent shrimp trawl data. (Joe West and Brian Alford)
9. Developed a model to predict amount of oyster meat yield per sack of oysters harvested (Brian Alford).
10. Maintained contract initiated by R. Pausina and C. Hoar with LSU's Joe Powers "Assessment Advice on Louisiana Marine Finfishes: Analytical Development, Support, and Assessment Research."
 - Joe West, Shaye Sable, Brian Alford, and Ronald Lachica attended a one-day work session with

MARINE DIVISION RESEARCH & ASSESSMENT

1. Continue centralized A&G processing of marine species otoliths to support planned stock assessments (under direction of Joe West)
2. Stock assessment of spotted seatrout in Louisiana waters
 - Project is ongoing with preliminary results available in April 2011 (under direction of Joe West)
3. Stock assessment of blue crab in Louisiana waters
 - Project is ongoing with preliminary results available (under direction of Joe West)
 - Preliminary results are being used in ongoing Marine Stewardship Council certification process

Powers using LDWF spotted seatrout data to run an example stock assessment

11. Committees served on by Stock Assessment personnel

- Brian Alford: Southeast Aquatic Resources Partnership, Science and Data Committee, Habitat Sub-committee, Prioritization Tools Sub-committee
- Brian Alford: GSMFC: Habitat Technical Committee
- Brian Alford: National Fish Habitat Action Plan, Science and Data Committee
- Brian Alford: LDWF Natural Areas Preserve Committee
- Brian Alford: LDWF State Wildlife Grants Committee
- Brian Alford: American Fisheries Society, Warmwater Streams Technical Committee
- Brian Alford: Gulf Hypoxia Task Force, took over as member after Shaye Sable left.

RESEARCH PROJECTS

PROBABILITY VS. NONPROBABILITY SAMPLING IN LAKE CATAOUATCHE, LA

A study comparing fixed (subjectively chosen) vs. randomly selected electrofishing stations was conducted on Lake Cataouatche during the spring and fall of 2010. Fisheries managers currently utilize electrofishing samples collected at subjectively chosen, fixed stations to survey and monitor largemouth bass populations in water bodies across the state. Electrofishing will be conducted using randomly and fixed sites for comparison of statistical strength. Results from the two techniques will be compared to determine which yields the most precise population estimates with the least amount of effort.

ASSESSMENT OF ANGLER EXPLOITATION OF CRAPPIE IN POVERTY POINT RESERVOIR

In 2009, a total of 442 Poverty Point Reservoir white crappie (*Pomoxis annularis*) were tagged with two reward tags each to assess angler exploitation. Tag returns were encouraged by issuing custom caps and entries into a grand prize drawing to all participating anglers. A concurrent creel survey was also conducted to acquire harvest data and determine angler characteristics. Crappie were tagged in both winter and fall to ensure a sufficient number of tags for peak angling seasons. Over 65 percent of the crappie tagged in January through March were caught and reported by recreational anglers. Of the crappie tagged in the fall (September through October), only 5 percent were returned by Dec. 31, even though the creel survey showed crappie harvest to be high in November and December. Further analysis of the tag/return and creel data will be performed soon. This information will be used to effectively manage the crappie population in Poverty Point Reservoir.

LAC DES ALLEMANDS CATFISH PROJECT & SPOTTED BASS AGE AND GROWTH PROJECT

District 7 is working on two projects simultaneously. All necessary samples have been collected for the Lac Des Allemands catfish age and growth project. Spines have been pulled, sectioned and read, and age estimates are in the process of being verified. The field work for year one of the Florida stream spotted bass age & growth project has been completed. Fish assemblage samples were collected with spotted bass being the primary target. Otoliths are in the process of being read for 50 spotted bass (greater than 6 inches) from the Tangipahoa River and 118 spotted bass (greater than 6 inches) from the Amite River.

CONTRIBUTION TO YEAR CLASS STRENGTH OF HATCHERY REARED LARGEMOUTH BASS IN SMALL UPLAND IMPOUNDMENTS

To determine the recruitment success of individual stockings at different rates, 1,200 hatchery-reared Florida largemouth bass were marked with the antibiotic oxytetracycline (OTC) and stocked into four small impoundments on Fort Polk Joint Training Readiness Center. An additional 3,800 fish were marked simultaneously and held to determine mark retention over time. Five thousand fish were not treated with OTC but were handled identically for use as controls in this study.

Prior to stocking in March 2009, the ponds were sampled by electrofishing to determine baseline catch per unit effort of largemouth bass and subsamples were collected to determine the maximum size of age-1 fish (9 inches). Marked fish were stocked in April 2009 with 0 percent transport mortality as determined by holding 25 fish in minnow traps for 24 hours in each pond.

Marked fish held in ponds at Booker Fowler State Fish Hatchery were subsampled at 30 and 200 days post marking. Otoliths were removed and examined under a fluorescent microscope for OTC marks. We found 100 percent mark retention at 30 (n=26) and 200 (n=30) days. A double blind reader assessment was also conducted at 30 days post mark by randomly mixing marked (n=4) and unmarked (n=21) largemouth bass resulting in 100 percent accuracy and reader agreement (two readers).

CHANNEL CATFISH SIZES AT MATURITY IN TOLEDO BEND RESERVOIR

Channel catfish were captured using vertically fished hoop nets in two zones of Toledo Bend Reservoir. Taken in quarterly samples, 1,123 specimens were taken from specific sizes corresponding to average length at ages 2-6. Length, weight, sexual maturity, sex and gonad weight were taken from specimens, as well as pectoral spines for aging. All spines were sectioned, pictured and aged by three independent readers. Data has been compiled and is being analyzed for length and age at which 50 percent of all fish were sexually mature. Gonad weight is being used to construct a gonad somatic index and length and age data to construct a von Bertalanffy growth model. This data will be used to make future management recommendations for Toledo Bend Reservoir.

MARKING LARGEMOUTH BASS FRY BY FEEDING OXYTETRACYCLINE TREATED ARTEMIA

Brine shrimp (*Artemia sp.*) cysts were hatched in OTC solutions at three different concentrations and fed with each concentration for three days to groups of swim-up fry. These fry were then stocked in one-acre rearing ponds and raised to about 25 millimeters. When the ponds were harvested, a sample of fish were collected and frozen. About 5,000 fish from each pond were transferred to one acre earthen ponds at Beechwood Fish Hatchery to grow out to Phase II size. When these ponds were harvested in November, another sample of fish was collected.

Otoliths were successfully extracted from both sizes of bass. An Omano OMFL400 fluorescence microscope was used to attempt detection of the OTC marks. This effort has been unsuccessful thus far, but problems with the 100W halogen light power supply were encountered. A warranty repair of the power supply is being investigated.

A COMPARISON OF TWO TYPES OF GEAR, LEAD NETS AND TRAP NETS, FOR CAPTURING *POMOXIS SPP.* IN JOHN K. KELLY-GRAND BAYOU RESERVOIR, COUSHATTA, LA

Crappie information is gathered through the spring and fall electrofishing surveys and through the few crappie that are collected in gill nets during winter months. These sampling methods result in low overall numbers and indicate that the crappie population is not being accurately represented through these gear types.

This research project will attempt to test lead nets and trap nets fished in close proximity to one another, and compare catch rates, as well as collect length, weight and age data from crappie and possibly other species collected. The study will be performed on John K. Kelly Reservoir (aka Grand Bayou Reservoir) in Red River Parish near Coushatta, La. Crappie are often sought by Grand Bayou anglers on the reservoir, but LDWF does not have adequate data to make reasonably informed management decisions.

THE AFFECT OF LEAD NET SOAK TIME ON CATCH PER UNIT EFFORT OF CRAPPIE *POMOXIS SPP.* IN FOUR CENTRAL LOUISIANA LAKES

Preliminary studies by LDWF biologists indicate lead nets maybe the best choice of gear to collect crappie for standardized sampling. There is a need to determine the optimal soak time when utilizing these nets. There is also concern about predation on game species trapped in the net. Information gained through this study will allow the LDWF to standardize methods used to collect crappie. Standardized methods will allow data collected throughout the state to be compared.

This study will be conducted in four waterbodies in central Louisiana. Five lead nets will be set for each treatment group in each of the four lakes. The treatment will be soak time and will include a 24-hour set, a 48-hour set, a 72-hour set and a 96-hour set (i.e., 1-4 days). Each of

the lakes will be a replicate. Thus, each soak time treatment will have four independent replicates (Total effort will be 4 lakes x 4 soak times = 16 samples x 5 nets/sample = 80 total net-sets). Each of the treatments (i.e., soak times) will be conducted in different locations within each lake to minimize bias.

Information gained from this study should optimize man power and expenses when sampling crappie. Consequently, this study will have direct implications for management of Louisiana's crappie fisheries.

SIGNIFICANCE OF STOCKING LARGEMOUTH BASS TO ACCELERATE POPULATION RECOVERY FOLLOWING HURRICANE-INDUCED FISH KILL IN THE LOWER ATCHAFALAYA BASIN

Hurricanes are capable of causing major fish kills in freshwater ecosystems. When a hurricane makes landfall and travels through a body of freshwater, damage to habitat and water quality occur resulting in fish kills (Rogers and Allen 2008). On Sept. 1, 2008, Hurricane Gustav made landfall along Louisiana's Gulf Coast. The hurricane caused major fish kills (due to reduced dissolved oxygen) throughout the southeastern portion of the state. One of the most significant fish kills within LDWF- Inland Fisheries District 9 was within the Atchafalaya Basin. Approximately 99 million fish was estimated to have died in the lower Atchafalaya Basin. Approximately 6 million of these fish were largemouth bass.

The purpose of this study is to determine if stocking largemouth bass will expedite the recovery of the largemouth bass fishery in the Atchafalaya Basin following hypoxia-induced fish kills caused by the hurricane. The study will be conducted in natural bayous within the lower Atchafalaya Basin where significant fish kills occurred. The sites selected are adequate for this study due to low numbers of bass recently collected during LDWF's standardized sampling. Florida strain largemouth bass will be used (as a biological marker) to stock selected sites. Future fish samples from these sites will be compared to fish samples from non-stocked sites where native largemouth bass will undergo a natural recovery. Genetic testing will be used to distinguish the Florida strain from the native largemouth bass. The numbers of Florida strain bass versus numbers of native bass collected from electrofishing will be used to determine if stocking bass following a significant fish kill is beneficial to the fishery.

2010 PERMITS

Inland Fisheries Section issues a variety of permits to provide individuals a legal method to participate in a specific activity.

FRESHWATER PRAWN PERMIT

Issued to allow individuals to possess, do research on or culture freshwater shrimp/prawns.

Issued: 0

FRESHWATER SCIENTIFIC COLLECTING PERMIT

Used to take fish for scientific research or educational purposes, propagation or distribution.

Issued: 56 permits (to collectors from seven different states)

TRIPLOID GRASS CARP PERMIT

Used to allow individuals to possess triploid grass carp for aquatic vegetation control in private ponds and lakes.

Issued: 307 permits

TRIPLOID GRASS CARP SELLERS PERMIT

Used to allow individuals to import, transport, possess and sell triploid grass carp to the public.

Issued: 7 permits (to fish hatcheries from six different states)

TILAPIA PERMIT

Used to allow individuals to possess for resale, do research on or culture tilapia.

Issued: 10

EXPERIMENTAL FRESHWATER MINNOW DIPNET

Used to allow individuals to commercially fish for minnows using a specific dip net.

Issued: 0

GAMEFISH FINGERLING PERMIT

Used to allow individuals to transport, possess and sell game fish fingerlings.

Issued: 13 permits (to individuals from six different states)

MUSSEL HARVESTER'S PERMIT

Used to allow individuals to commercially harvest freshwater mussels.

Issued: 0

MUSSEL BUYER'S PERMIT

Used to allow individuals to buy commercially harvested mussels from mussel harvesters.

Issued: 0

SCUBA SPEARFISHING PERMIT

Used to allow individuals to spearfish in Toledo Bend Reservoir June through September.

Issued: 11

SALTWATER SCIENTIFIC COLLECTING PERMIT

Used to take fish for scientific research or educational purposes, propagation or distribution.

Issued: 1

ADMINISTRATIVE

The Office of Fisheries Administrative Section provides strategic guidance, interagency collaboration, executive management and administrative support for all Fisheries activities.

Included in Fisheries Administrative Section is the Assistant Secretary, Deputy Assistant Secretary and support staff.

Throughout legislative sessions, the Assistant Secretary attends weekly committee hearings, provides insight and guidance on Fisheries' budget to the legislative joint committee on the budget and works to ensure all legislation needed for the execution of Fisheries' priorities are authored, considered in committee, and commented on throughout the legislative session. In addition to providing guidance and information regarding Fisheries' activities to the Louisiana Legislature, the Assistant Secretary meets with stakeholder groups, federal congressional delegates, local and parish officials, and other parties interested in Louisiana fisheries.

In fiscal year 2009-2010, Fisheries began studying an office-wide reorganization to streamline and improve efficiencies. The reorganization, planned for fiscal year

2010-2011, reduces the number of program manager and supervisor positions, allowing Fisheries to dedicate more funding and manpower to resource management. The planned reorganization also brings Fisheries closer to the Department of Civil Service's recommendation of one supervisory role, versus four, creating a more cohesive leadership structure. An additional benefit of the reorganization, effective July 1, 2010, is allowing employees to practice within their areas of expertise.

In advance of the reorganization, the Office of Fisheries Administrative Section also implemented a new expense coding system to better track expenditures, providing a more robust exception reporting system.

Daily responsibilities for the Administrative Section include executive management of operations.

By supporting the operations of the Office of Fisheries, the Administrative Section ensures the propagation of activities that benefit Louisiana's aquatic natural resources while being both transparent and accountable to taxpayers.

LOUISIANA SEAFOOD PROMOTION & MARKETING BOARD

ANNUAL EVENTS

The Louisiana Seafood Promotion and Marketing Board (LSPMB) kicked off 2010 with its seventh annual Great American Seafood Cook-Off and the Louisiana Alligator Soirée. These two events are LSPMB's biggest of the year and are responsible for a tremendous amount of media coverage. For these two events alone, LSPMB received media coverage in 50 states on more than 250 news outlets for a total of more than 99 million impressions, otherwise known as the number of times an impression was made on a viewer or consumer.

The Great American Seafood Cook-Off featured 15 renowned chefs from 15 states competing for the title of King or Queen of Louisiana Seafood. Taking home the title of King of American Seafood this year was Louisiana's own, Chef Tory McPhail of Commander's Palace. The emcee for the event was Sig Hansen of The Discovery Channel's *Deadliest Catch* and Chef John Folse of Louisiana.

The Louisiana Alligator Soirée featured culinary schools from across the state competing using Louisiana alligator. Both events were held at the Louisiana Restaurant Association's Food Service EXPO.

In January 2010, the Oyster Walk the Hill was held in Washington D.C. Representatives from the oyster industry traveled to Washington, D.C., meeting with legislators throughout the week educating them on the importance of the oyster industry and what it means for Louisiana state, culturally and economically. Two events hosted by the Gulf Oyster Industry Council, "Let the World Be Your Oyster" and "Louisiana Alive" let attendees sample Louisiana oysters. Both of these events showcased Louisiana oysters to congressional representatives, national media and other political leaders. For the 2010 event, Louisiana Representative Charlie Melancon from the state's 3rd District and Representative Steve Scalise of Louisiana's 1st District battled off in an oyster eating competition on a local television station in Washington D.C.

LSPMB also began 2010 with its annual trip to the Boston Seafood Show where staff and industry representatives met with seafood sales personnel from across the

globe to discuss the high value and quality of Louisiana seafood.

In April 2010, the annual Oysters Jubilee was held in the French Quarter. This event featured the world's longest Louisiana oyster po'boy. The po'boy was 340 feet long. Oyster lovers lined up for blocks hoping to get a piece of the special po'boy, which is divided into sections with a different local restaurant charged with dressing each section. The po'boy featured more than 5,000 Louisiana oysters.

Also in April 2010, at the French Quarter Festival, the oyster eating competition was replaced with a crawfish eating competition and drew a huge crowd.

The annual LSPMB legislative day was also held in April 2010. This event gave legislators the opportunity to meet with seafood industry representatives in a casual environment while sampling delicious Louisiana seafood prepared by various event restaurant sponsors.

MEDIA RESPONSE TO DEEPWATER HORIZON OIL SPILL

LSPMB played a major role in responding to the April 20, 2010 Deepwater Horizon Oil Spill. Working with the Office of Fisheries staff and leadership, LSPMB staff coordinated conference calls with industry representatives, from chefs to seafood suppliers, as well as conducted interviews with media.

Throughout the Gulf oil spill crisis, LSPMB continued to promote and market Louisiana seafood, including at the Louisiana Seafood Cook-Off held at the New Orleans Wine and Food Experience held in May. The event included 13 chefs from across the state that participated in the cook-off and competed for the title of King or Queen of Louisiana Seafood. The 2010 winner was Chef Chris Lusk of Café Adelaide in New Orleans.

LSPMB sponsored two festivals in June 2010, the first annual Oyster Festival and the fourth annual Louisiana Seafood Festival. Festival goers feasted on Louisiana seafood from a variety of vendors, and listened to local Cajun and Zydeco music sponsored by the Jazz and Heritage Foundation.

Three years ago, the Louisiana Seafood Festival joined the Creole Tomato Festival and the Cajun-Zydeco Festival in a weekend of festival fun called "A New Orleans Vieux to Do." Both festivals were even more important in 2010, highlighting the fact that the Louisiana seafood industry was still in business and fresh, quality Louisiana seafood was still available.

In fiscal year 2010-2011, LSPMB plans to undertake new marketing efforts and public relations strategies to help improve public perception of Louisiana seafood.

SOCIOECONOMIC RESEARCH & DEVELOPMENT

The Socioeconomic Research and Development (SRD) Section was established in 1992 and currently resides in LDWF Office of Fisheries. The duties and responsibilities of the section are:

- To recommend, conduct and coordinate economic research studies pertaining to wildlife and fisheries resources of Louisiana and the Gulf region;
- To present research findings at appropriate professional and scientific meetings, and publish results in departmental publications and peer-reviewed scientific journals;
- To provide information and support to other sections and divisions within LDWF, as well as agencies outside LDWF, assisting them in accomplishing research needs, management tasks and short- and long-term objectives;
- To represent LDWF and Louisiana on various study groups, task forces and committees established to study, manage and improve wildlife and fisheries resources at the local, state, regional and national levels;
- To administer and implement special programs, and;
- To perform other activities as directed by LDWF's appointing authorities.

FISCAL & ECONOMIC IMPACT STATEMENTS

With assistance from the various program managers within the offices of LDWF, the SRD Section prepares Fiscal and Economic Impact Statements that accompany the Notices of Intent and Rules considered for adoption by the Louisiana Wildlife and Fisheries Commission. During fiscal year 2009-2010, a total of 17 Fiscal and

Economic Impact Statements were developed and published along with the Notices of Intent in the Louisiana Register.

PROGRAMS, PROJECTS & SURVEYS

Programs, projects and surveys administered by the SRD Section during fiscal year 2009-2010 included the Clean Vessel Program, Cooperative Research Survey, LDWF Recreational Marina Survey, Gulf of Mexico State Waters' Shrimpers Survey, DM932 Oil Spill Damage Assessment Project, Louisiana Resident Boat Owner Survey, Louisiana Commercial Wild Crawfish Survey, and the Gulf Seafood and Processor Survey.

CLEAN VESSEL PROGRAM

The Clean Vessel Program provides funds to owners of recreational boating facilities for construction and renovation of boat sewage disposal facilities. The purpose of this program is to reduce overboard discharge of raw boat sewage in Louisiana's waters by providing boaters with a safe and convenient method to dispose of boat sewage. Through the program, recreational boating facility owners are reimbursed up to 75 percent of the costs of approved activities. Funds are also used to develop and distribute educational and promotional materials to encourage boaters to use these facilities and to promote environmentally responsible behavior. Clean Vessel activities in fiscal year 2009-2010 included:

- Entering into an agreement with Moon Lake Resort Partnership to renovate an existing boat sewage pumpout facility on the Ouachita River, located north of Monroe in Ouachita Parish.

- Distributing educational information and promotional items at the following events: National Hunting and Fishing Day in Baton Rouge in September 2009; the Girl Scout Extravaganza event held in Westwego on September 26, 2009; the Rollin' Buccaneer RV Club Fourth Annual Anniversary event held in New Orleans on Jan. 15-17, 2010; the 2010 Louisiana Environmental Education Symposium held in Baton Rouge on Feb. 26-27, 2010; and the Contraband Bayou Annual Cleanup held at the Bowtie Marina in Lake Charles on April 24, 2010.
- The placement of a clean vessel public notice in the 2010 Recreational Fishing Regulations encouraging boaters to properly dispose of their boat sewage at available boat sewage disposal facilities located throughout the state.
- Partnering with the Louisiana Department of Natural Resources to promote the Clean Marina and the Clean Vessel Program throughout the coastal zone of Louisiana.

COOPERATIVE RESEARCH SURVEY

A cooperative research data collection program was implemented in May 2009 to measure the impact and monitor the recovery of Louisiana's seafood industry from the 2005 and 2008 hurricanes. In the spring of 2009, program application forms were mailed to 4,427 fishermen and 395 dealers to measure interest in participating in the Cooperative Research Program. In fiscal year 2009-2010, surveys were mailed to 3,249 commercial fishermen and to 328 seafood dealers who applied to participate in the program.

During fiscal year 2009-2010, multiple workshops were held by LDWF economists across Louisiana to assist fishermen with completing surveys and applications to participate in the program. Meetings were also held between LDWF economists and the South Central Planning and Development staff, a company contracted to assist LDWF with this project's data collection efforts. The meetings with the South Central Planning and Development staff were to develop and improve skills necessary to assist fishermen and dealers complete the survey over the phone or in person.

As of June 2009, approximately 2,900 fishermen surveys and 303 dealer surveys had been submitted by participants. Of these surveys, 2,291 fishermen and 281 dealer surveys had been reviewed for completeness. It is expected that more surveys will be submitted by the end of 2010. After a survey has been reviewed and deemed complete, the information is scanned into a database for analysis. The scanning and database development process is expected to be completed in 2011, and a final report is expected to be completed and published in 2012.

LDWF RECREATIONAL MARINA SURVEY

As part of an economic assistance program administered by the Office of Fisheries Marine Division, the SRD Section conducted a survey of marinas that serve recreational boaters and anglers in coastal Louisiana. Over 60

marinas were selected for participation in the survey by the LDWF Marine Fisheries Division. The survey was designed to estimate marinas' revenues and operating expenses, to assess damages associated with the 2005 and 2008 hurricanes, and to determine their current needs and plans for future operations.

Questionnaires were first mailed in February 2009. Completed questionnaires continued to come from marinas in 2010. As of July 2010, a total of 58 surveys had been received. A final report of the results of the survey is expected in 2011.

GULF OF MEXICO STATE WATERS' SHRIMPERS SURVEY

In collaboration with GSMFC and NOAA economists, the SRD staff designed and conducted a Gulf of Mexico State Waters' Shrimpers Survey to assess shrimp harvesting activities and expenses of commercial fishermen in Florida, Alabama, Mississippi, Louisiana and Texas. The four-page questionnaire was mailed in May 2009 and was printed in both English and Vietnamese translations. Five hundred and eighty-five surveys have been returned, and a report of the findings of this survey is expected to be completed in 2011.

DM932 OIL SPILL DAMAGE ASSESSMENT PROJECT

On July 23, 2008, a shipping accident in the Mississippi River in New Orleans caused an oil spill that affected fishing and other recreational activities in and south of New Orleans. SRD staff assisted in the assessment of the damage associated with the incident by identifying resources that may have been affected by the spill, suggesting methods for assessing the damage, and designing survey methods and instruments. Staff from SRD also served as trustees representing LDWF in consultations with representatives of NOAA and the Louisiana Oil Spill Coordinators Office.

In September 2009, SRD staff participated in Resource Equivalency Analysis training with staff from the Louisiana Oil Spill Coordinators Office and other state agencies.

SRD staff participated in conference calls discussing the assessment of damages to recreational fishing resources in February, March and April 2010.

LOUISIANA RESIDENT BOAT OWNERS SURVEY

In the fall of 2009, the SRD Section and LDWF Enforcement Division cooperated to develop and implement a survey of boat owners with a focus on their use of personal flotation device and their perceptions of regulations related to their use. In October 2009, the SRD Section mailed 2,000 questionnaires to Louisiana resident motorboat registration holders. We received 1,292 returned questionnaires and 28 non-deliverable surveys for a response rate of 65.5 percent. A report based on the assessment of this survey was completed in March 2010.

LOUISIANA COMMERCIAL WILD CRAWFISH HARVESTERS SURVEY

In early 2010, the SRD Section cooperated with LDWF Inland Fisheries Division staff to develop a survey of Louisiana resident commercial wild crawfish harvesters to assess their perceptions of selected hypothetical changes in crawfish harvesting policies, rules and regulations. Questionnaires were mailed to 1,142 Louisiana resident commercial fishermen who were identified as having sold crawfish between July 1, 2008 and June 30, 2009, using LDWF trip ticket landings data. With only one mailing, the survey received 470 completed questionnaires and 13 non-deliverable surveys for a response rate of 42 percent. A report based on the assessment of this survey was completed in March 2010.

GULF SEAFOOD PROCESSORS AND DEALERS ECONOMIC SURVEY

In March 2010, the SRD Section and GSMFC worked together to design a dealer and processor survey to assess the economic impact of the seafood industry at local and regional levels in Gulf of Mexico (Florida, Alabama, Mississippi, Louisiana and Texas). This questionnaire will be tested in the fall of 2010 and the survey is anticipated to be implemented in 2011. The purpose of the survey is to provide policy-makers, trade associations and others involved in this industry with a better understanding of how this sector works and how important the seafood processing, wholesaling and distribution industry is to local and regional economies throughout the Gulf region.

PUBLICATIONS, REPORTS & PRESENTATIONS

Isaacs, Jack C., Louisiana Senior Anglers Report, Baton Rouge: Louisiana Department of Wildlife and Fisheries, July 2009.

Isaacs, Jack C., "A Presentation on Selected Trends in Shrimp Harvesting, Processing, and Imports," Presentation at the Cameron Shrimp Summit, Cameron, La., Sept. 16, 2009.

Isaacs, Jack C., "A Presentation to the Louisiana Shrimp Task Force on Industry Trends," Presentation at the Louisiana Shrimp Task Force Meeting, Baton Rouge, La., Sept. 28, 2009.

Isaacs, Jack C., "The Economics of Wildlife and Fisheries Resources in Louisiana: Sources and Conclusions," Presentation at the LSU School for Renewal Resources, Baton Rouge, La., September 2009.

Bucker, Michael, "Revenue Generated by Shrimp Excise Tax," Presentation at the Louisiana Shrimp Taskforce Meeting, Baton Rouge, La., Nov. 16, 2009.

Ogunyinka, E.O. and D.R. Lavergne, "On the Valuation of Louisiana Inland Waters for Recreational Fishing," Selected Paper for the AFS Annual Meeting, Baton Rouge, La., Jan. 28-29, 2010.

Bharadwaj, Latika and David Lavergne, "Louisiana Shrimp Industry: Trends from 2000-2007: Are there Signs of Recovery from the Hurricanes Katrina and Rita in 2005?," Presentation at American Fisheries Society meetings, Baton Rouge, La., Jan. 28-29, 2010.

Louisiana Department of Wildlife and Fisheries Law Enforcement Division and Socioeconomic Research and Development Section, 2010 Statistical Report and Personal Flotation Device (PFD) Survey, Baton Rouge: Louisiana Department of Wildlife and Fisheries, March 2010.

Isaacs, Jack C., and David R. Lavergne, Louisiana Commercial Crawfish Harvesters Survey Report, Baton Rouge: Louisiana Department of Wildlife and Fisheries, March 2010.

Buckner, Michael and David Lavergne, "Comparison of Research Triangle Institute Proposal to Issues Identified at the Interstate Shellfish Sanitation Conference," Oyster Post Harvest Treatment Workshop, Baton Rouge, La., March 4, 2010.

Miller, Alex, and Jack C. Isaacs, "2009 Economic Survey of the Inshore Shrimp Fleet: Preliminary Results," Presentation at the Gulf State Fisheries Economics Workshop, Orange Beach, Ala., March 9-10, 2010.

Bharadwaj, Latika, "Seafood Value Chains: Seafood Dealer and Processor Survey," Presentation at the GSMFC Annual Spring Meeting, Orange Beach, Ala. March 8-11, 2010.

Ogunyinka, E. O. and D. R. Lavergne, "Efficiency of Sharing Methods for Government Disaster Payments: The Case of Hurricanes and Louisiana Commercial Fisheries Participants," Selected Paper for the SWEA Annual Meeting, Houston, Texas, March 31 - April 3, 2010.

Bharadwaj, Latika and David Lavergne, "Coastal Louisiana Parishes: Trends and Signs of Recovery in Shrimp Industry from Hurricane Katrina and Rita," poster presented at CNREP 2010 conference (Challenges of Natural Resource Economics & Policy: The Third National Forum on Socioeconomic Research in Coastal Systems), New Orleans, La., May 26-28, 2010.

Liese, Christopher, Jack C. Isaacs, and Alex Miller, "Economic Status, Performance, and Impacts of the Gulf of Mexico Shrimp Fishery in 2008," Presentation at the Center for Natural Resource Economics and Policy's Third National Forum on Socioeconomic Research and Coastal Systems, New Orleans, La., May 28, 2010.

REPRESENTATION ON TASK FORCES, STUDY GROUPS & COMMITTEES

During fiscal year 2009-2010, SRD staff members represented LDWF on the following task forces, study groups and committees:

- GSMFC Disaster Recovery Program Committee
- GSMFC Arenarius Technical Task Force
- Louisiana Recreational Saltwater Fishing Task Force

- LDWF Marine Fisheries Information Systems Proposal Committee
- DM932 Oil Spill Assessment Trustees
- GSMFC FIN Social/Economic Work Group
- Louisiana Blue Crab Task Force
- Louisiana Clean Marina Program Committee
- Louisiana Ozone Action Committee
- Louisiana State Seafood Industry Advisory Board
- Louisiana Wild Crawfish Task Force
- MSC 252 (BP Oil Spill) Human Use Technical Work Group Trustees
- Socioeconomic Panel of the Gulf of Mexico Fisheries Management Council
- Socioeconomic Section of the American Fisheries Society
- Technical Advisory Committee for the U.S. Fish and Wildlife Service's National Survey of Fishing, Hunting and Wildlife-Associated Recreation
- Louisiana Recreational Freshwater Fishing Task Force
- Data Management System Proposal Review Committee